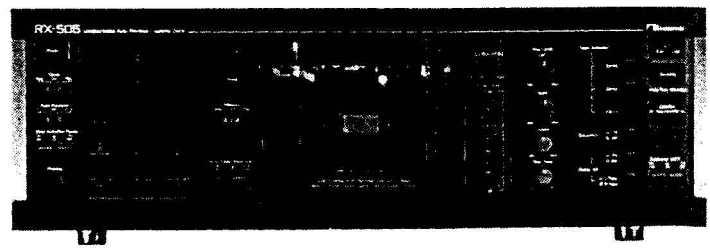
Nakamichi

Service Manual

Nakamichi
RX-505
RX-505E

Unidirectional Auto Reverse
Cassette Deck



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1. GENERAL

1.1. Voltage Selector
Voltage selector is installed on the rear panel for Other version of the Nakamichi RX-505/RX-505E.
This voltage selector can select either 120 V or 220-240 V at customer's disposal.

1.2. Packing Materials and Owner's Manual

Part No.	Description	Q'ty
0F03741A	Outer Carton (U.S.A., Canada, Australia, Others & Japan)	1
0F03745A	Outer Carton (UK & 220V Class 2)	1
0F03776A	Inner Carton (U.S.A., Canada, Australia, Others & Japan)	1
0F03777A	Inner Carton (UK & 220V Class 2)	1
0F03742A	Packing	2
0D04323A	Owner's Manual RX-505 (U.S.A., Canada & Australia)	1
DA03728A	Owner's Manual RX-505/RX-505E (including French statement) (UK, 220V Class 2 & Others)	1
0D04324A	Owner's Manual RX-505 (Japan)	1

2. MECHANICAL ADJUSTMENTS

2.1. Preparation for Adjustment
Load a Gauge into the RX-505 as follows:

(1) Removal of the Cassette Case Ass'y and Cover Plate Ass'y
Refer to Fig. 2.1.
(a) Remove the Front Panel Ass'y.
(b) Turn the Power switch to ON.
(c) Push the Eject/Load button to slide out the Cassette Compartment.
(d) Remove F01 (Stopper Ring 3 mm), F02 (Mylar Washer) and F03 (Cassette Case Ass'y).
(e) Unfasten two screws F04 and remove F05 (Cover Plate Ass'y).
Note: Do not miss the parts removed.

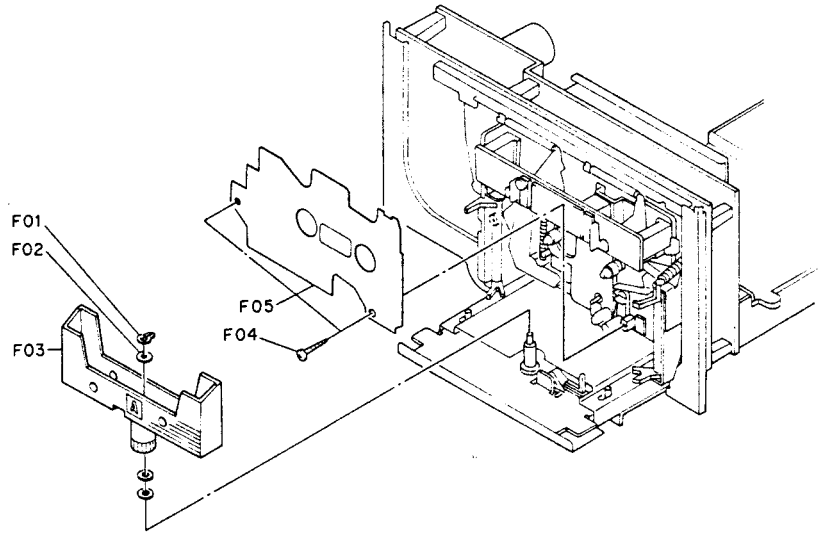


Fig. 2.1

(2) How to Load a Gauge

(a) Tape the Record Protector switch as shown in Fig. 2.2 to allow easy loading of a Gauge.

(b) Load a Gauge as follows:
1) Place a Gauge instead of a cassette tape.
2) With pushing the Gauge with your fingers, push the Eject/Load button to load the Gauge.
The Cassette Compartment automatically slides in and then the Lock Arms (Right & Left) secure the Gauge.

(3) After Adjustment

After adjustment, reverse the above steps as follows:

(a) Push the Eject/Load button to slide out the Cassette Compartment and remove the Gauge.

(b) Remove the tape of the Record Protector switch.

(c) Mount the F05 (Cover Plate Ass'y) and F03 (Cassette Case Ass'y).
Note: Mylar washer(s) must be placed on the original places.

(d) Push the Eject/Load button to slide in the Cassette Compartment.

(e) Turn the Power switch to OFF.

(f) Mount the Front Cover.

2.2. Mechanism Control Cam Adjustment

(1) Offset Adjustment of Control Motor Driver

(a) Refer to Fig. 2.3.
Adjust VR602 and VR603 on the Logic P.C.B. Ass'y to locate approximately at the middle of the variable range. Then turn ON the Power switch.
VR602 (for Cam position play)
VR603 (for Cam position stop)

(b) Press the Stop button to set the cassette deck in Stop mode. Adjust VR603 (for stop) so that the "S" mark on the Cam corresponds to the pointer on the mechanism chassis.

(c) Press the Play button to set the cassette deck in Playback mode. (Cam will rotate, and the position marked with "PY" comes to the pointer.) Adjust VR602 (for play) so that the "PY" mark on the Cam corresponds to the pointer.

(d) Repeat above (b) and (c) 2 — 3 times so that the "S" and "PY" marks on the Cam correspond to the pointer accurately in Stop and Playback modes respectively.
(This adjustment is required because the position adjusted by one volume will be slightly changed when the other volume is adjusted.)

(e) Set the cassette deck in F.F., Pause, or Cue mode by pressing each button.
Check to insure that the pointer is in a range of "F", "PS", or "CU" mark respectively.

(f) If out of the range, precise adjustment for each position according to "(2) Offset Fine Adjustment of Control Motor Driver" will be required.

(2) Offset Fine Adjustment of Control Motor Driver

Adjust only if a satisfactory result is not obtained in "(1) Offset Adjustment of Control Motor Driver". This adjustment is made by changing the value of the fixed resistors on the Logic P.C.B.
Note: The value of voltage is typical value.

(a) Observation Point of Reference Voltage

Observe the each voltage at the sliding contact of the Cam Control Volume VR608 in Stop, Fast (F.F. or Rew.), Pause and Playback modes.

(b) Reference Voltage

Reference voltage at the sliding contact of VR608 (Cam Control Volume) in each mode is as follows:

Mode	Reference Voltage (Typical Value)
Stop	0 V
Fast (F.F./Rew.)	−2.0 V
	2.0 V ±0.25 V
Pause	−6.5 V
Play	−9.1 V
	2.6 V ±0.4 V

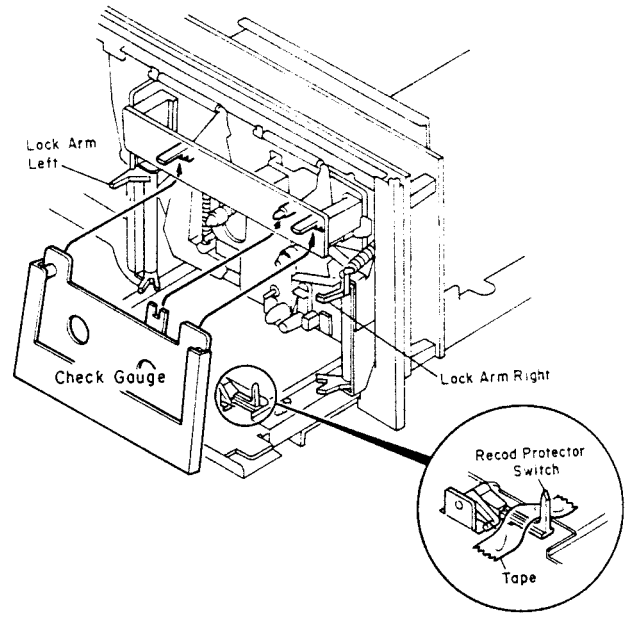


Fig. 2.2

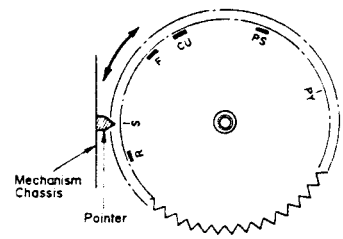


Fig. 2.3

(c) Resistors for Adjustment

Mode	Ref. No.	Typical Value
Fast (F.F./Rew.)	R655	22 kΩ
Pause	R649	76.8 kΩ (F)
Play	R653	10 kΩ

(d) Adjustment Procedures

1) Set the cassette deck in Stop mode, then check to insure that the voltage at the sliding contact of VR608 is 0 V (±0.3 V).

2) Set the cassette deck in F.F. mode, then adjust the value of R655 so that the voltage at the sliding contact of VR608 will become lower by 2.0 V (±0.25 V) than in Stop mode.

3) Press the Pause button to set the cassette deck in Pause mode. Adjust the value of R649 to obtain −6.5 V (+0.4, −0.15 V) at the sliding contact of VR608.

4) Set the cassette deck in Playback mode, then adjust the value of R653 so that the voltage at the sliding contact of VR608 will become lower by 2.6 V (±0.4 V) than in Pause mode.

2.3. Reel Motor Speed Adjustment in Play Mode

(1) Connect a DC voltmeter to TP602 and GND on the Logic P.C.B. Ass'y.

(2) Without loading a cassette tape, set the cassette deck in Play mode.

(3) Adjust VR604 on the Logic P.C.B. Ass'y to obtain −4 V on the DC voltmeter.

2.4. Record Head and Playback Head Tilt Adjustment

Note: On items 2.4 — 2.10, refer to Fig. 2.4 flow chart.

Refer to Figs. 2.5 and 2.6.

(1) Load a Tilt Check Gauge M-9039 (DA09039B) in the cassette deck.

(2) Clip the grounding terminal of the Tilt Check Gauge with one end of the cord with clip, and the chassis of the cassette deck with the other end.

(3) Remove both of the Height Gears.

(4) Set the cassette deck in Play mode. Check to insure whether the Beacons Playback Head "Upper" or "Lower" and Record Head "Upper" or "Lower" are illuminating. In order not to give damages onto the head surfaces, push both of slide knobs of the Gauge to the direction of arrow marks, then return them to the original place to be in contact with record head and playback head surfaces after Play mode is securely locked.

(5) Check to insure freedom from contact between the Gauge and pad lifter.

(6) Beacon Playback Head "Lower" will light on when height adjustment screw (P) turned clockwise but Playback Head "Upper" when counterclockwise. Adjust so that both "Upper" and "Lower" will light on even when you move the slide knob to the direction of an arrow mark and then return it to the original place.

(7) Same procedures will apply to the Beacons Record Head "Upper" and "Lower", except for the height adjustment screw (R).

(8) Set the cassette deck in Stop mode and fit both of the serrated Height Gears. Then set the cassette deck again in Play mode and insure all of the 4 Beacons are illuminating. If not, (3) through (7) will have to be repeated till satisfactory results are obtained.

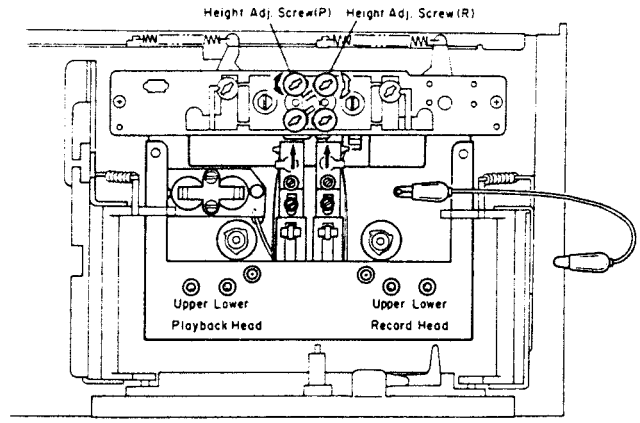


Fig. 2.5

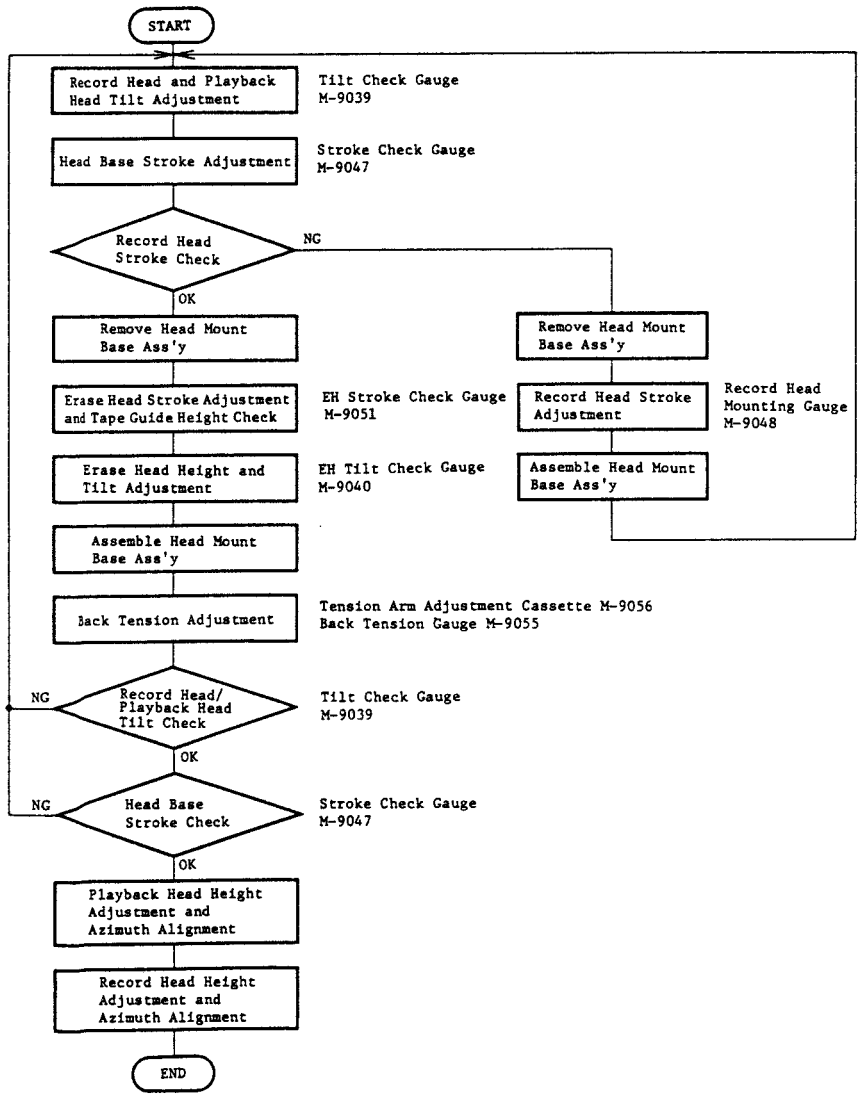

START
Record Head and Playback Head Tilt Adjustment
Tilt Check Gauge M-9039
Head Base Stroke Adjustment
Stroke Check Gauge M-9047
Record Head Stroke Check
NG
OK
Remove Head Mount Base Ass'y
Erase Head Stroke Adjustment and Tape Guide Height Check
EH Stroke Check Gauge M-9051
Erase Head Height and Tilt Adjustment
EH Tilt Check Gauge M-9040
Assemble Head Mount Base Ass'y
Back Tension Adjustment
Tension Arm Adjustment Cassette M-9056
Back Tension Gauge M-9055
Record Head/ Playback Head Tilt Check
Tilt Check Gauge M-9039
Head Base Stroke Check
Stroke Check Gauge M-9047
Playback Head Height Adjustment and Azimuth Alignment
Record Head Height Adjustment and Azimuth Alignment
END
Remove Head Mount Base Ass'y
Record Head Stroke Adjustment
Record Head Mounting Gauge M-9048
Assemble Head Mount Base Ass'y

Fig. 2.4

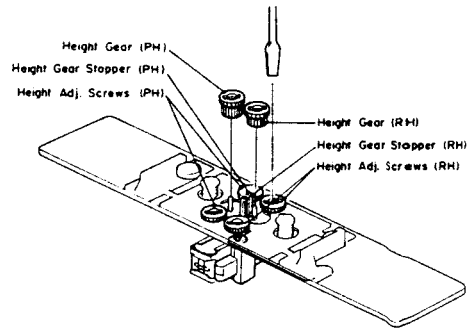


Fig. 2.6

2.5. Head Base Stroke Adjustment

Refer to Fig. 2.7.

Note: Before you conduct this adjustment, adjust with a "Tilt Check Gauge" to insure freedom from tilt on the playback head and record head.

(1) **Head Base Stroke Adjustment in Play Mode**

(a) Load a Stroke Check Gauge M-9047 (DA09047B) in the cassette deck.

(b) Move Record Head Indicator and Playback Head Indicator to the direction of arrow mark "A" with your finger tip and then set the cassette deck in Play mode.
Then slowly release the Indicators and insure whether each of the Indicators is in contact with record and playback heads.

(c) Check to insure whether the "P" pointer on the Playback Head Indicator locates between the 2 lines on the Indicator Plate.

(d) If the playback head stroke is noted to be misaligned, adjustment can be made by moving the stroke adjuster assembled in the head base assembly (either forwardly or backwardly).

(e) Check to insure whether the "P" pointer on the Playback Head Indicator locates between the 2 lines on the Record Head Indicator, thus check can be made on record head stroke.

(f) If the record head stroke is noted to be misaligned, adjustment can be made with a Record Head Mounting Gauge M-9048 (DA09048B).

(2) **Head Base Stroke Adjustment in Cue Mode**

(a) Load a Stroke Check Gauge M-9047 (DA09047B) in the cassette deck.

(b) Move Record Head Indicator and Playback Head Indicator to the direction of arrow mark "A" with your finger tip and then set the cassette deck in Cue mode.
Then slowly release the Indicators and insure whether each of the Indicators is in contact with record and playback heads.

(c) Check to insure whether the "C" pointer on the Playback Head Indicator locates between the 2 lines on the Indicator Plate.

(d) If the playback head stroke is noted to be misaligned, adjust VR601 on the Logic P.C.B. Ass'y till satisfactory results are obtained.

(e) After completion of the Head Base Stroke Adjustment, check to insure accuracy of the Head Base Stroke Adjustment in Play mode.
If the above are inaccurate, items (1) and (2) will have to be repeated till satisfactory results are obtained.

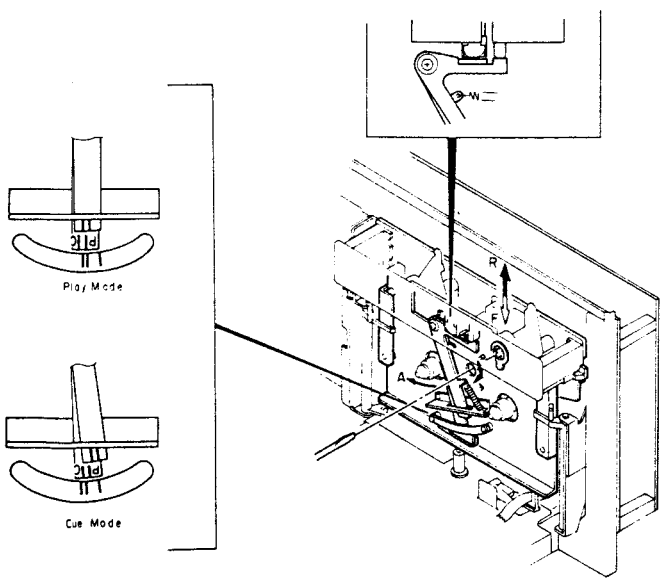


Fig. 2.7

2.6. Erase Head Stroke Adjustment and Tape Guide Height Check

Remove the Head Mount Base Ass'y.

Refer to Figs. 2.8 and 2.9.

(1) **Erase Head Stroke Adjustment**

(a) Load an EH Stroke Check Gauge M-9051 (DA09051B) in the cassette deck.

(b) Set the cassette deck in Play mode, thus check can be made on erase head stroke through the EH Stroke Indicator.

(c) Check to insure whether the erase head surface is aligned with red line on the EH Stroke Indicator. If not, adjust the erase head stroke by loosening 2 screws A that assemble erase head and erase head plate.

(d) After completion of adjustment, 2 pcs. of screws shall be locked with lock tight paint.

(2) **Supply Tape Guide Height Check**

(a) Load an EH Stroke Check Gauge M-9051 (DA09051B) in the cassette deck.

(b) Set the cassette deck in Play mode.

(c) Slide the Supply Tape Guide Check Bar down against the supply tape guide, and check to insure that the Supply Tape Guide Check Bar is accepted by the supply tape guide.

(3) **Take-up Tape Guide Height Check**

(a) Load an EH Stroke Check Gauge M-9051 (DA09051B) in the cassette deck.

(b) Set the cassette deck in Play mode.

(c) Slide the Take-up Tape Guide Check Bar down against the take-up tape guide, and check to insure that the Take-up Tape Guide Check Bar is accepted by the take-up tape guide.

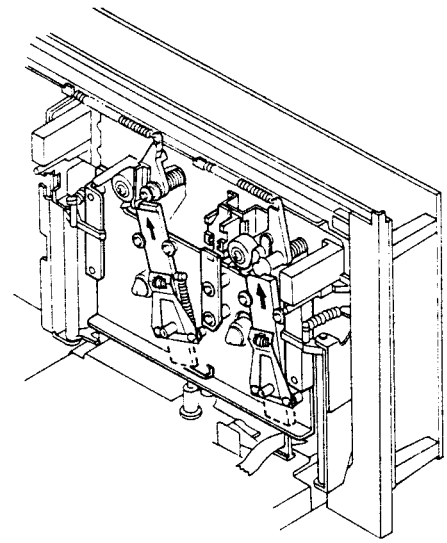


Fig. 2.8

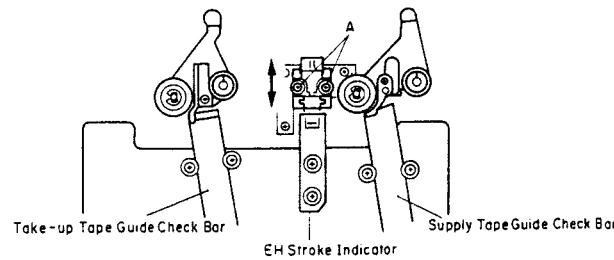


Fig. 2.9

2.7. Erase Head Height and Tilt Adjustment

Refer to Figs. 2.10 and 2.11.

(1) Remove Head Mount Base Ass'y.
(2) Load an EH Tilt Check Gauge M-9040 (DA09040B) in the cassette deck.
(3) Set the cassette deck in Stop mode.
(4) Check to insure whether one of the 3 Beacons is illuminating. Look down the mirror as shown by an arrow mark and slowly turn the Screw "Height" counterclockwise (or clockwise) so that the two horizontal lines on the mirror will become superposed on the line (in different color) of the erase head, and check to insure whether Beacon "1" is illuminating.
(5) Turn Screw "Tilt" counterclockwise (or clockwise) to light on Beacon "2". Excessive turning will cause the Beacon "1" to light off. Adjustments of Screw "Tilt" will therefore be conducted till both of the Beacons "1" and "2" illuminate.
(6) Turn Screw "Azimuth" counterclockwise (or clockwise) to light on Beacon "3". Excessive turning will cause either Beacon "1" or "2" to light off, and therefore adjust Screw "Azimuth" until all of the 3 Beacons "1", "2" and "3" illuminate.
(7) Check to insure whether the horizontal line on the mirror corresponds to that on the erase head. If not, (4) through (7) will have to be repeated till satisfactory results are obtained.
(8) After completion of adjustment, 3 pcs. of screws shall be locked with lock tight paint.

Note: Before use of this gauge, check to insure freedom from dust or dirts, or overflow in the groove of the erase head surface.

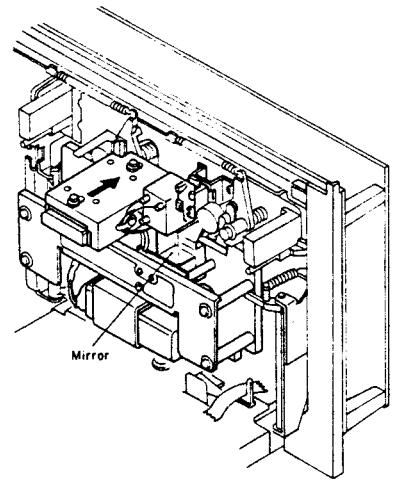


Fig. 2.10

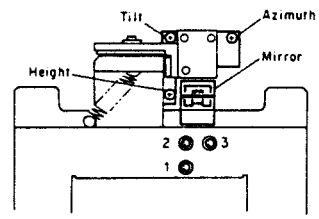


Fig. 2.11

2.8. Back Tension Adjustment

Refer to Figs. 2.12 — 2.15.

(1) Load a Tension Arm Adjustment Cassette (DA09056B) in the cassette deck referring to Fig. 2.12.
(2) Set the cassette deck in Play mode.
(3) Bend the Back Tension Arm with pliers so that the gap between the Cassette Holding Spring assembled on the Head Base Ass'y and the Back Tension Arm becomes 0.5 mm as shown in Fig. 2.13. Do not bend the top of the Back Tension Arm.
(4) Set the cassette deck in Stop mode, and remove the Tension Arm Adjustment Cassette (DA09056B), then set the cassette deck in Cue mode.
In Cue mode, check to insure that the gap is found between the Supply Reel Hub B Ass'y and the Felt of Back Tension Ass'y as shown in Fig. 2.14.
(5) Load the Back Tension Gauge (DA09055B) in the cassette deck.
(6) Set the cassette deck in Play mode and read the torque value of Back Tension Gauge.
If the value is in a range of 5 g-cm to 9 g-cm, adjustment is not necessary. If not, change the installation point of the Back Tension Spring as shown in Fig. 2.15, and obtain the torque of 6 g-cm to 8 g-cm range.

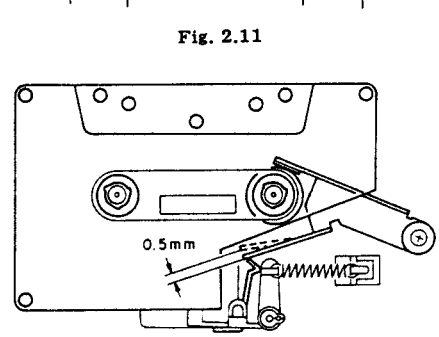


Fig. 2.13

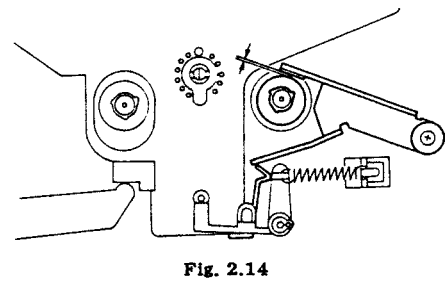


Fig. 2.14

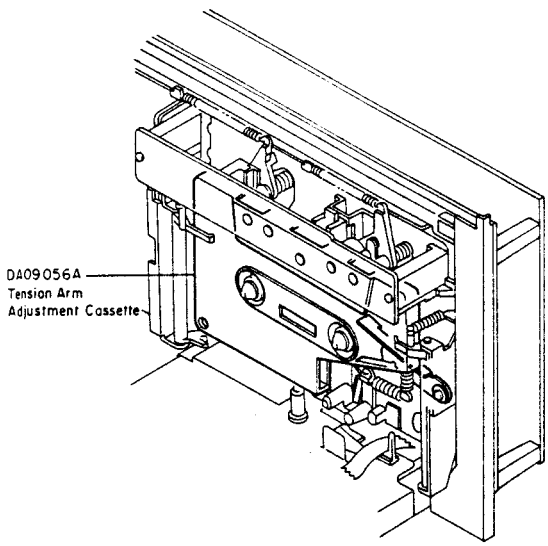


Fig. 2.12

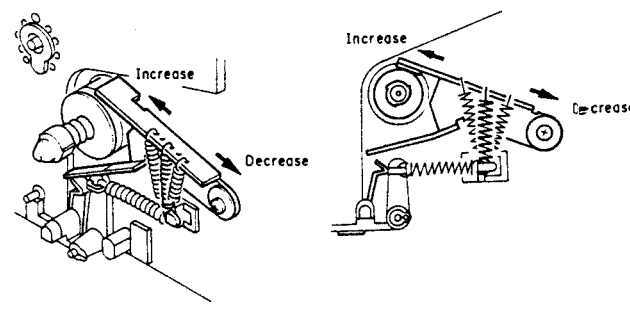


Fig. 2.15

2.9. Playback Head and Record Head Height Adjustment and Azimuth Alignment

(1) Playback Head Height Adjustment and Azimuth Alignment

Refer to Fig. 2.16.

(a) Set the Monitor switch to Tape, then connect a VTVM to the Output Jacks.
(b) Load a 1 kHz Track Alignment Tape (DA09007B), then set the cassette deck in Play mode.
(c) Turn the PH Height Gear until the outputs of both channels become minimum.
(d) Load a 15 kHz Azimuth Tape (DA09004B), then set the cassette deck in Play mode.
(e) Turn the PH Azimuth Alignment Screw until the outputs of both channels become maximum.
(f) Repeat above steps (b) through (e) one or two times to obtain optimum performance.

(2) Record Head Height Adjustment and Azimuth Alignment

Refer to Figs. 2.16 and 2.17.

(a) Set the cassette deck in Stop mode.
(b) Set the Monitor switch to Tape, Eq. switch to 70 μs and Tape Selector switch to SX.
(c) Load a reference SX tape (DA09025B) and connect a VTVM to Output Jacks.
(d) Feed in 400 Hz (0 dB) to the Input Jacks.
(e) Set the cassette deck in Record and Play mode and turn the RH Height Gear until the outputs of both channels become maximum.
(f) Feed in 15 kHz (—20 dB) to the Input Jacks and turn the RH Azimuth Alignment Screw until the outputs of both channels become maximum.
(g) Repeat (d) to (f) one or two times to obtain optimum performance.
(h) After completion of the above adjustments, feed in 400 Hz (0 dB) and set the cassette deck in Record and Play mode. Record 400 Hz tone to the same portion of both sides A and B of the tape.
(i) Immerse the recorded tape in a magnetized developing solution. In turn, check to insure that the recording head tracks across the center are separated with a distance of 0.55 to 0.75 mm (typically 0.65 mm) as illustrated in Fig. 2.17.

Note: Liquid for tape magnetized development solution "MAGNA-SEE SOUND CRAFT a product of CBS RECORDS a division of Columbia Broadcasting System, Inc., Danbury, Conn. 06810 U.S.A., or equivalent".
After development, clean the tape otherwise pressure rollers and heads will become dirty.

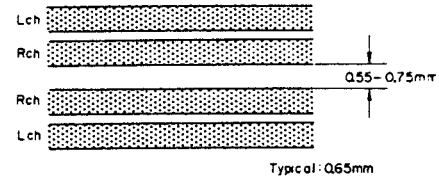


Fig. 2.17

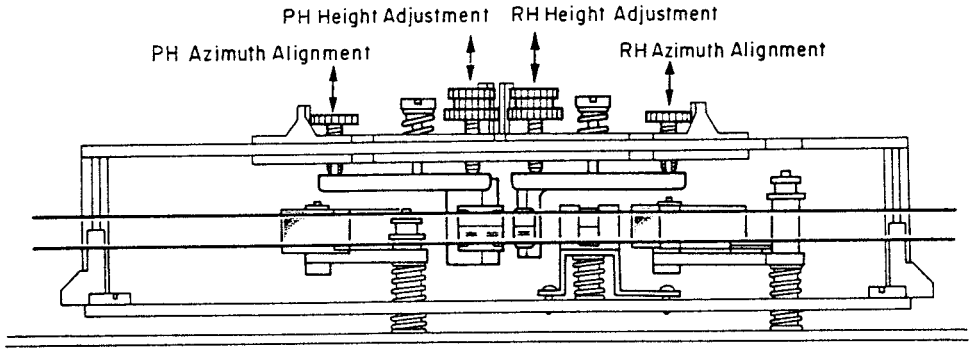


Fig. 2.16

2.10. Record Head Stroke Adjustment

Refer to Figs. 2.18 and 2.19.

Note: This adjustment will be required only to insure freedom from misalignment of the record head stroke in the record head stroke check mode.

(1) Check the accuracy of the record head stroke.
(2) Remove Head Mount Base Ass'y.
(3) Remove the record head assembly.
(4) Adjustment of Record Head Mounting Gauge M-9048 (DA0-9048B)
  (a) Mount the Block B onto the Mounting Gauge Plate.
  (b) Loosen the 2 screws fixing the Block A.
  (c) As shown in Fig. 2.18, hold the Gauges (3.05 mm and 0.1 mm thickness) between the Block A and Block B, and fix the Block A with screws, pushing the Block A to the 2 guide pins.
(5) Remove the Block B from the Mounting Gauge Plate.
(6) As shown in Fig. 2.19, mount the record head assembly onto the Mounting Gauge Plate, then check the location of the record head surface. (If record head touches the Block C, loosen 2 pcs. of screws that assemble record head and record head plate, then place the record head assembly onto the Plate.)
(7) Remove the record head assembly from the Mounting Gauge Plate.
(8) Readjustment of Record Head Mounting Gauge M-9048 (DA09048B)
  (a) Mount the Block B onto the Mounting Gauge Plate.
  (b) Loosen the 2 screws fixing the Block A.
  (c) As shown in Fig. 2.18, hold the Gauges (3.05 mm and either one of 0.05, 0.15, 0.2, 0.25, 0.3 or 0.35 mm thickness) between the Block A and Block B, and fix the Block A with screws, pushing the Block A to the 2 guide pins.
(9) Remove the Block B from the Mounting Gauge Plate.
(10) Mount the record head assembly onto the Mounting Gauge Plate.
(11) As shown in Fig. 2.19, loosen 2 pcs. of screws that assemble record head and record head plate.
  As the location of the Block A is secured by the item (8)-(c), push the record head to the directions A and B, then tighten 2 pcs. of screws.
(12) Check to insure freedom from gap between the Block C and record head surface, then tighten the 2 pcs. of screws on the record head assembly with lock tight paint.
(13) Remove the record head assembly from the Mounting Gauge Plate.
(14) Assemble the record head assembly to the head mount base assembly.
(15) Assemble the head mount base assembly to the mechanism assembly.
(16) Check the record head stroke.
  If the above are inaccurate, items (1) through (16) will have to be repeated till satisfactory results are obtained.

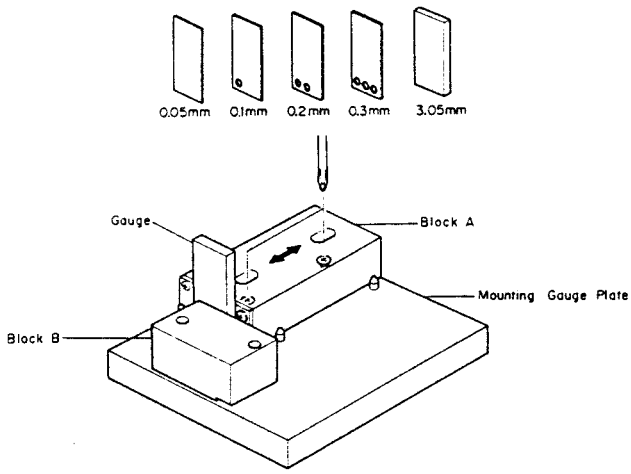


Fig. 2.18

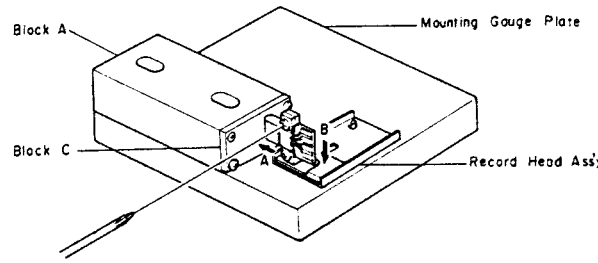


Fig. 2.19

2.11. Tape Travelling Adjustment

Load and playback the Tape Travelling Cassette (DA09071A) and check the following:

(1) Tape is contact with heads sufficiently.
(2) Tape waving is small on the heads and pressure rollers.
(3) Tape is free from waving or slippage from the tape guides.

If either of the above should be noted, adjustment of items 2.4 to 2.10, etc. will be required.

As a case may be, the said waving or slippage may have been caused from defective Supply Pressure Roller Ass'y or Take-up Pressure Roller Ass'y without parallel contact with capstans. If such are noted, the Pressure Roller Assemblies will have to be replaced.

Further, excessively weak take-up torque or strong take-up torque may cause defective tape travelling.

The cassette deck is intended to be an adjustment-free model, however if the similar matters as above should be noted, please replace the Reel Hub Ass'y to obtain appropriate take-up torque.

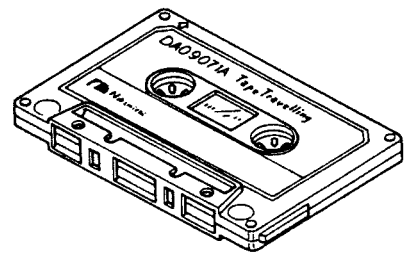


Fig. 2.20

2.12. Flywheel Holder Adjustment

Refer to Fig. 2.21.

(1) Tighten the Thrust Screws until the gap between the Flywheel Assemblies and Thrust Screws becomes minimized when both of the Capstan Shafts are moved backwardly and forwardly by hand (the Thrust Springs between the Capstan Flanges and Flywheel Thrust Caps are in a flat state).
Excessive tightening of the Thrust Screws however will give damages on the Flywheel Assemblies, to which careful attention is invited.
(2) Return the Thrust Screws by 1/2 turn.
(3) Fixing the Thrust Screws with a screwdirver, lock the Lock Nut.
(4) Apply a quantity of lock tight paint to the Thrust Screws.

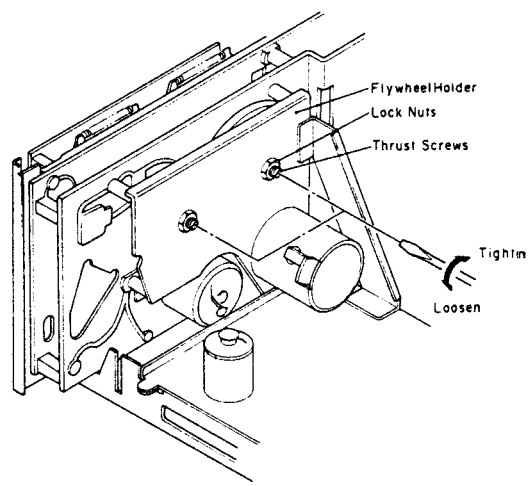


Fig. 2.21

2.13. Tape Speed Adjustment

Refer to Fig. 2.22.

(1) Remove the Top Cover Ass'y.
(2) Connect a Frequency Counter to the Output Jack.
(3) Load a 3 kHz Speed Wow/Flutter Tape (DA09006C) and play it back.
(4) Adjust the Tape Speed Adjustment Volume (VR501) incorporated in the Capstan Motor to obtain 3,000 Hz on the Frequency counter.
    CCW: Motor drives slowly.
    CW: Motor drives fast.

2.14. Slide Base Position Adjustment (on the Logic P.C.B. Ass'y)

(1) Pull out the connector CN604 on the Logic P.C.B. Ass'y.
(2) Ground TP604 to set the cassette case to its side A.
(3) Adjust VR607 to obtain a gap of 2 to 4 mm as shown in Fig. 2.23.
(4) Ground TP603 and TP604 to set the cassette case to its side B.
(5) Adjust VR606 to obtain a gap of 2 to 4 mm as shown in Fig. 2.23.
(6) Ground only TP603 to set the cassette case to its eject position.
(7) Adjust VR605 to the position where the cassette case is about to start rotation.
(8) Repeat above steps (2) to (7) two or three times.
(9) Plug CN604 into the original place.

2.15. Lubrication

This is a lubrication-free cassette deck except when parts are replaced. Apply the following lubricant for each replaced part:

(1) LAUNA #100
    Capstan Shaft
    Pressure Roller Shaft
    Thrust Cap
(2) FLOIL GB-TS-1
    Reel Hub Shaft
    Thrust portion on the Capstan Shaft
    FLOIL GB-TS-1, made by Kanto Chemicals Co., Ltd. in Japan.
    We suggest that you use the above or equivalent type. If unavailable please contact Kanto Chemicals Co., Ltd., 2-7 Kanda Sakuma-cho, Chiyoda-ku, Tokyo 101 Japan.
(3) Silicon Oil #3000 CST
    Air Damper Piston
    Note: Excessive lubrication may cause defective damper action as the 0.2Φ hole at the end of the cylinder may be filled with oil.

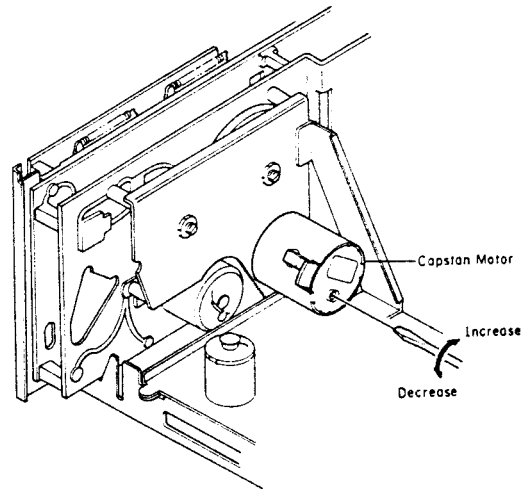


Fig. 2.22

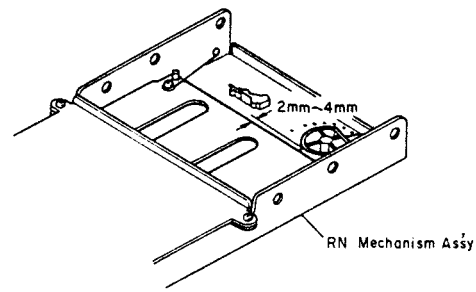
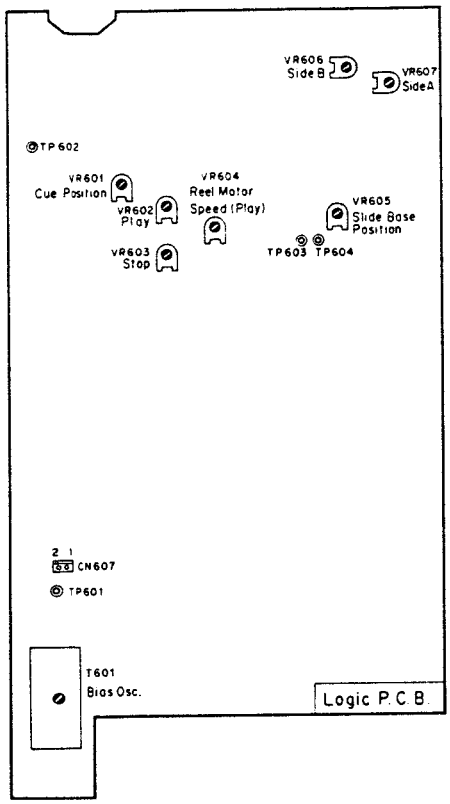
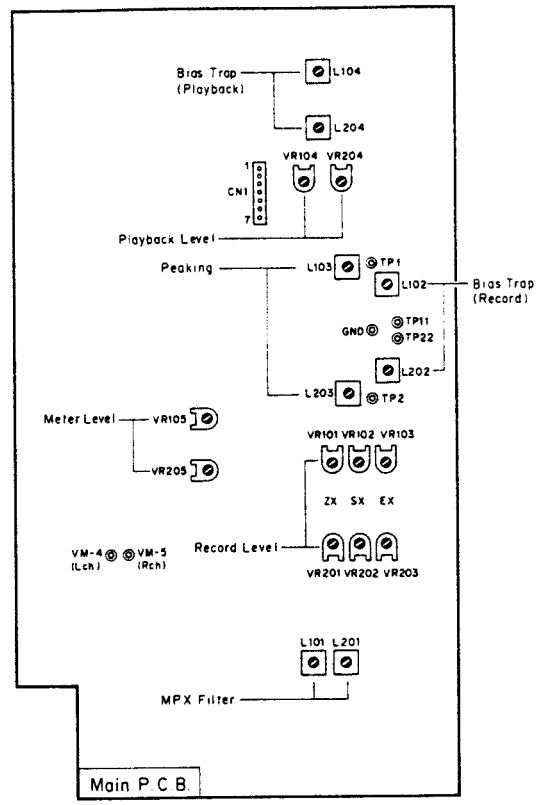


Fig. 2.23

3. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT





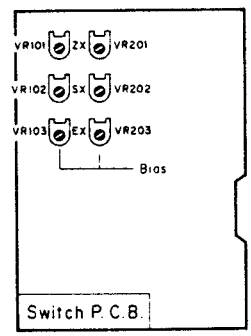


Fig. 3

4. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

Notes: 1. Electrical adjustment should be performed after mechanical adjustment is completed.
2. Before adjustment, set the Bias Tune control on the Front Panel to its mechanical center position.

4.1. Adjustment and Measurement Instructions

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	Tape Speed Adjustment	3 kHz Speed and Wow/Flutter Tape (DA09006C)	Frequency Counter to Output Jacks	Playback Eq. SW — 70 μs	Tape Speed Adjustment Volume	Adjust the volume incorporated in the capstan motor to obtain 3 kHz ±0.5% on the frequency counter.
2	Meter Level Calibration	400 Hz to Input Jacks	VTVM to VM-4, VM-5 on Main P.C.B.	Monitor SW — Source	Main P.C.B. VR105, VR205	1. Feed in 400 Hz, then adjust the Input Level controls to obtain 1.0 V —1 dB on the VTVM. 2. Adjust VR105 (VR205) so that the 0 dB segment of the level meter starts illuminating. 3. Adjust the Input Level control to obtain 1.0 V on the VTVM, then decrease the generator output level by 20 dB. 4. Check to insure that the segment for —20 dB illuminates.
3	MPX Filter Adjustment	19 kHz ±100 Hz to Input Jacks	VTVM to Output Jacks	Monitor SW — Source Dolby NR SW — OFF MPX SW — ON	Main P.C.B. L101, L201	1. Turn the Output Level control fully clockwise (maximum position). 2. Adjust the Input Level controls to obtain 1 V on the VTVM. 3. Set the MPX Filter switch to ON, then adjust L101 (L201) to obtain the minimum reading on the VTVM (the minimum reading will be less than —30 dB).
4	Playback Head Track Alignment	1 kHz Track Alignment Tape (DA09007B)	VTVM to Ouptut Jacks	Playback Monitor SW — Tape Eq. SW — 70 μs Dolby NR SW — OFF MPX SW — OFF	PH Height Gear	Adjust the PH Height Gear to obtain minimum readings of both channels on the VTVM. Refer to "Playback Head Height Adjustment and Azimuth Alignment" in item 2.9.
5	Playback Head Azimuth Alignment	15 kHz Azimuth Tape (DA09004B)	VTVM to Output Jacks	Playback Monitor SW — Tape Eq. SW — 70 μs Dolby NR SW — OFF MPX SW — OFF	Playback Head Azimuth Alignment Screw	Adjust the Playback Head Azimuth Alignment Screw to obtain maximum readings of both channels on the VTVM. Refer to "Playback Head Height Adjustment and Azimuth Alignment" in item 2.9. Note: Repeat steps 4 and 5 one or two times to obtain optimum performance.
6	Playback Level Calibration	400 Hz Level Tape (DA09005B)	VTVM to VM-4, VM-5 on Main P.C.B.	Same as above	Main P.C.B. VR104, VR204	Adjust VR104 (VR204) to obtain 1.0 V on the VTVM.
7	Playback Frequency Response Adjustment	400 Hz Level Tape (DA09005B) 10 kHz PB Frequency Response Tape (DA09003B) 15 kHz PB Frequency Response Tape (DA09002B) 20 kHz PB Frequency Response Tape (DA09001B)	VTVM to Output Jacks	Playback Monitor SW — Tape Tape SW — SX Eq. SW — 70 μs Dolby NR SW — OFF MPX SW — OFF	Main P.C.B. R143, R243 R144, R244	1. Load a 400 Hz level tape and play it back. Adjust the Output Level control to a certain level (0 dB for example). 2. Load 10 kHz, 15 kHz and 20 kHz PB frequency response tapes and adjust the playback head azimuth to obtain maximum levels on the VTVM with each tape. Short R143 (R243) or R144 (R244) to obtain the following levels against the level for the 400 Hz level tape. 10 kHz: —20 dB —2 dB to +2 dB 15 kHz: —20 dB —2 dB to +3 dB 20 kHz: —20 dB —2 dB to +4 dB 3. Conduct step 5 "Playback Head Azimuth Alignment". 4. If above is not sufficient, refer to "Playback Frequency Response Adjustment" in item 4.2.
8	Bias Oscillation Frequency and Erase Current Adjustment		VTVM across the additional 0.1 Ω resistor and Frequency Counter to CN607-1 on Logic P.C.B.	Record, Pause Monitor SW — Source Tape SW — ZX Eq. SW — 70 μs Dolby NR SW — OFF MPX SW — OFF	Logic P.C.B. T601 R961, R960	1. Connect an additional 0.1 Ω resistor in series to the Erase Head, then connect a VTVM across it. 2. Adjust T601 to obtain 105 kHz on the frequency counter. 3. Check the erase current by the VTVM. Erase current will be in a range of 310 mA to 400 mA (typically approx. 350 mA). If erase current is not sufficient, increase it by shorting R961 or R960. 4. After completion of the erase current adjustment, re-check the bias oscillation frequency. 5. Remove the additional 0.1 Ω resistor.
9	Record Amplifier Equalizer Adjustment	23 kHz (—20 dB) to Input Jacks	VTVM to TP11, TP22 on Main P.C.B.	Same as above	Main P.C.B. L103, L203	1. Remove the bias-cut-jumper from the dip side of the Logic P.C.B. Ass'y. 2. Adjust L103 (L203) to obtain approx. +16 dB at 23 kHz on the VTVM. 3. Re-solder the bias-cut-jumper.
10	Bias Trap Adjustment (Record Amp.)	Remove input signals	VTVM to TP1, TP2 on Main p.C.B.	Same as above	Main P.C.B. L102, L202	Adjust L102 (L202) to obtain minimum reading on the VTVM.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
11	Bias Trap Adjustment (Playback Amp.)	Remove input signals	VTVM to CN1-1, CN1-2 on Main P.C.B.	Record, Pause Monitor SW — Tape Tape SW — ZX Eq. SW — 70 μs Dolby NR SW — OFF MPX SW — OFF	Main P.C.B. L104, L204	Adjust L104 (L204) to obtain minimum reading on the VTVM.
12	Record Head Height Adjustment	400 Hz (0 dB) to Input Jacks	VTVM to Output Jacks	Record, Playback Monitor SW — Tape Tape SW — SX Eq. SW — 70 μs Dolby NR SW — OFF MPX SW — OFF	RH Height Gear	Adjust the RH Height Gear to obtain maximum readings of both channels on the VTVM. Refer to "Record Head Height Adjustment and Azimuth Alignment" in item 2.9.
13	Record Head Azimuth Alignment	15 kHz (—20 dB) to Input Jacks	VTVM to Output Jacks	Same as above	Record Head Azimuth Alignment Screw	Adjust the Record Head Azimuth Alignment Screw to obtain maximum readings of both channels on the VTVM. Refer to "Record Head Height Adjustment and Azimuth Alignment" in item 2.9. Note: Repeat steps 12 and 13 one or two times to obtain optimum performance.
14	Record Level Calibration and Recording Bias Current Adjustment	400 Hz and 15 kHz and 10 kHz/20 kHz (—20 dB) to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record, Playback Tone — 400 Hz/ 15 kHz Monitor SW — Source/ Tape Tape SW — ZX/SX/ EX Eq. SW — 70 μs (ZX/SX) 120 μs (EX) Dolby NR SW — C-Type/B-Type/ OFF MPX SW — OUT	Main P.C.B. (Level) ZX: VR101, VR201 SX: VR102, VR202 EX: VR103, VR203 Switch P.C.B. (Bias) ZX: VR101, VR201 SX: VR102, VR202 EX: VR103, VR203	Adjustment should be made in the order of ZX, SX and EX. 1. Set the Monitor switch to Source and Dolby NR switch to C-Type. 2. Feed in 400 Hz, then set the Input Level controls to obtain 0 dB (1 V) on the VTVM. 3. Set the Monitor switch to Tape. 4. Load a reference ZX tape (DA09037B), reference SX tape (DA09025B) and reference EXII tape (DA09066B). 5. Adjust Record Cal. VR101 (VR201) for ZX, VR102 (VR202) for SX and VR103 (VR203) for EX on the Main P.C.B. Ass'y to center position. 6. Feed in 400 Hz (0 dB), then record and play it back. Adjust Bias VR101 (VR201) for ZX, VR102 (VR202) for SX and VR103 (VR203) for EX on the Switch P.C.B. Ass'y to obtain the maximum readings on the VTVM. 7. Feed in 15 kHz (—20 dB), then adjust Bias VR101 (VR201), VR102 (VR202) and VR103 (VR203) on the Switch P.C.B. Ass'y to obtain the same readings as source monitor levels on the VTVM. 8. Feed in 400 Hz (0 dB), then adjust Record Cal. VR101 (VR201), VR102 (VR202) and VR 103 (VR203) on the Main P.C.B. Ass'y to obtain 0 dB on the VTVM. 9. Repeat above 7 and 8 two or three times to obtain optimum performance. 10. Set the Dolby NR switch to OFF. 11. Feed in 10 kHz (—20 dB) and 20 kHz (—20 dB), then record and play them back. Check to insure that the levels are within —20 dB ±3 dB against the levels in Dolby NR C-Type. 12. Set the Dolby NR switch to B-Type. 13. Feed in 10 kHz (—20 dB) and 20 kHz (—20 dB), then record and play them back. Check to insure that the levels are within —20 dB ±3 dB against the levels in Dolby NR OFF. 14. Check to insure whether the total harmonic distortion is less than 0.9% for ZX tape and 1.0% for SX and EXII tapes. 15. If above is not sufficient, repeat 6 to 14 till satisfactory results are obtained.
15	Overall Frequency Response Adjustment	400 Hz (0 dB) and 20 Hz to 20 kHz (—20 dB) to Input Jacks	VTVM to Output Jacks	Record, Playback Monitor SW — Source/ Tape Tape SW — ZX/SX/EX Eq. SW — 70 μs (ZX/SX) 120 μs (EX) Dolby NR SW — OFF MPX SW — OUT	Main P.C.B. L103, L203	1. Set the Monitor switch to Source. 2. Feed in 400 Hz (0 dB) and adjust the Input Level controls to obtain 0 dB on the VTVM. 3. Switch the Generator output level to —20 dB. 4. Set the Monitor switch to Tape, then record and play it back. 5. Feed in 20 Hz to 20 kHz (—20 dB), and check to insure whether the output levels are within —20 dB ±3 dB. 6. If above is not sufficient, adjust L103 (L203) to obtain approx. —20 dB on the VTVM at 20 kHz. 7. Conduct step 14 "Record Level Calibration and Recording Bias Current Adjustment". 8. If above is not sufficient, precise re-adjustment of step 7 "Playback Frequency Response", replacement of Playback Head or Record Head, check on item 2.11 "Tape Travelling Adjustment" will be required.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
16	Crosstalk Measure-ment	1 kHz to Input Jacks	1 kHz Band Pass Filter and VTVM to Output Jacks	Record and Playback Monitor SW — Tape Tape SW — ZX Eq. SW — 70 μs Dolby NR SW — OFF		1. Erase a reference ZX tape with a bulk eraser. 2. Adjust the Input Level controls to obtain 0 dB on the VTVM, and record the signals on the reference tape. 3. Turn the cassette tape the other way round and play it back. 4. Measure the difference between 2 and 3.
17	Channel Separation Measure-ment	1 kHz to Input Jacks	Same as above	Same as above		1. Erase a reference ZX tape with a bulk eraser. 2. Adjust the L ch (R ch) Input Level control to obtain 0 dB on the VTVM, and close the R ch (L ch) Input Level control. 3. Record and play it back, then measure the R ch (L ch) level.
18	Erasure Measure-ment	1 kHz to Input Jacks	Same as above	Same as above		1. Erase a reference ZX tape with bulk eraser. 2. Adjust the Input Level controls to obtain 0 dB on the VTVM, and record the signals on the reference tape. 3. Rewind the tape then close the Input Level controls. 4. Record and play it back, then measure the difference between 2 and 3.
19	Signal to Noise Ratio Measure-ment	400 Hz to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record and Playback Monitor SW — Tape Tape SW — ZX Eq. SW — 70 μs Dolby NR SW — B-Type/C-Type		1. Set the Dolby NR switch to B-Type/C-Type. 2. Feed in 400 Hz and record and play it back. 3. Adjust the Input Level controls to obtain 3% total harmonic distortion in Playback mode. 4. Close the Input Level controls, then record. 5. After rewound, play back and check the output level difference between 2 and 3. Note: The filter of IHF-A curve shall be used in the measurements.
20	Total Harmonic Distortion Measure-ment	400 Hz to Input Jacks	Distortion Meter to Output Jacks	Record and Playback Monitor SW — Tape Tape SW — ZX/SX/EX Eq. SW — 70 μs (ZX/SX) 120 μs (EX) Dolby NR SW — OFF		1. Adjust the Input Level controls to obtain 0 dB on the VTVM. 2. Record and play it back. 3. Read the distortion meter and check to insure that the distortion is less than 0.9% for ZX tape and 1.0% for SX and EXII tapes.
21	Wow/ Flutter Measure-ment	3 kHz Speed and Wow/ Flutter Tape (DA09006C)	Wow/Flutter Meter to Output Jacks	Playback Monitor SW — Tape Eq. SW — 70 μs		Play back and read the wow/flutter meter.

4.2. Playback Frequency Response Adjustment

Figs. 4.1 and 4.2 show the playback amp. circuit for adjustment and the playback equalization curve.

This adjustment will be required if playback level is not sufficient during playing back a 20 kHz PB frequency response tape.

The peaking portion of the equalization curve compensates the gap loss of the playback head. Peaking level is varied by the short circuit of R143 (R243) or R144 (R244) on the Main P.C.B.

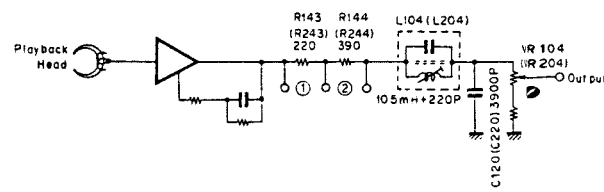


Fig. 4.1

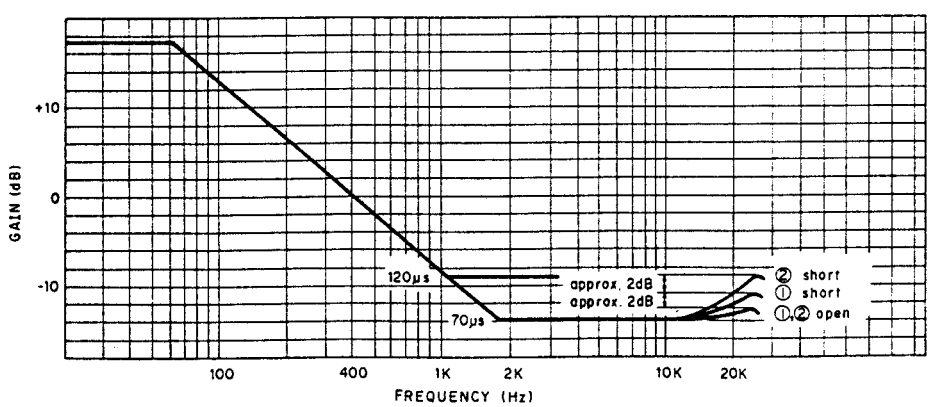


Fig. 4.2

4.3. Dolby NR Circuit Check

Dolby NR circuit incorporates Dolby NR ICs which have no adjustment point.
Perform the following checks and make sure that the IC operates accurately, i.e., accuracy of frequency response through IC.

4.3.1. Dolby NR B-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source:	1.4 kHz to CN1-1 (CN1-2) on Dolby NR P.C.B.
Output Connection:	VTVM to Output Jacks
Mode:	Stop Monitor SW — Tape Dolby NR SW — B-Type/OFF

(a) Connect a VTVM to the Output Jacks.
(b) Set the Dolby NR switch to B-Type.
Feed in 1.4 kHz to CN1-1 (CN1-2) and adjust the generator output control to obtain 100 mV on the VTVM.
(c) Set the Dolby NR switch to OFF.
Check to insure that the reading is +3.2 dB ±1.5 dB on the VTVM.

(2) Record Dolby NR Circuit

Signal Source:	1.4 kHz to Input Jacks
Output Connection:	VTVM to Output Jacks
Mode:	Stop Monitor SW — Source Dolby NR SW — B-Type/OFF

(a) Connect a VTVM to the Output Jack.
(b) Feed in 1.4 kHz and adjust the Input Level controls to obtain 100 mV/31.6 mV on the VTVM.
(c) Remove the VTVM from the Output Jacks and reconnect it to CN2-1 (CN2-2) on the Dolby NR P.C.B. Ass'y.
(d) Check to insure that the reading at CN2-1 (CN2-2) corresponds to the following with Dolby NR switch OFF and B-Type.

Input Level at MS25, MS26	Level at CN2-1, CN2-2	
	Dolby NR OFF	Dolby NR B-Type
100 mV	0 dB	+3.2 dB ±1.5 dB
31.6 mV	0 dB	+8.2 dB ±1.5 dB

4.3.2. Dolby NR C-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source:	1.4 kHz to CN1-1 (CN1-2) on Dolby NR P.C.B.
Output Connection:	VTVM to Output Jacks
Mode:	Stop Monitor SW — Tape Dolby NR SW — C-Type/OFF

(a) Connect a VTVM to the Output Jacks.
(b) Set the Dolby NR switch to C-Type.
Feed in 1.4 kHz to CN1-1 (CN1-2) and adjust the generator output control to obtain 100 mV on the VTVM.
(c) Set the Dolby NR switch to OFF.
Check to insure that the reading is +6.5 dB ±1.5 dB on the VTVM.

(2) Record Dolby NR Circuit

Signal Source:	1.4 kHz to Input Jacks
Output Connection:	VTVM to Output Jacks
Mode:	Stop Monitor SW — Source Dolby NR SW — C-Type/OFF

(a) Connect a VTVM to the Output Jacks.
(b) Feed in 1.4 kHz and adjust the Input Level controls to obtain 100 mV/31.6 mV on the VTVM.
(c) Remove the VTVM from the Output Jacks and reconnect it to CN2-1 (CN2-2) on the Dolby NR P.C.B. Ass'y.
(d) Check to insure that the reading at CN2-1 (CN2-2) corresponds to the following with Dolby NR switch OFF and C-Type.

Input Level at MS25, MS26	Level at CN2-1, CN2-2	
	Dolby NR OFF	Dolby NR C-Type
100 mV	0 dB	+6.5 dB ±1.5 dB
31.6 mV	0 dB	+11.4 dB ±1.5 dB

5. MECHANISM ASS'Y AND PARTS LIST

5.1. Synthesis

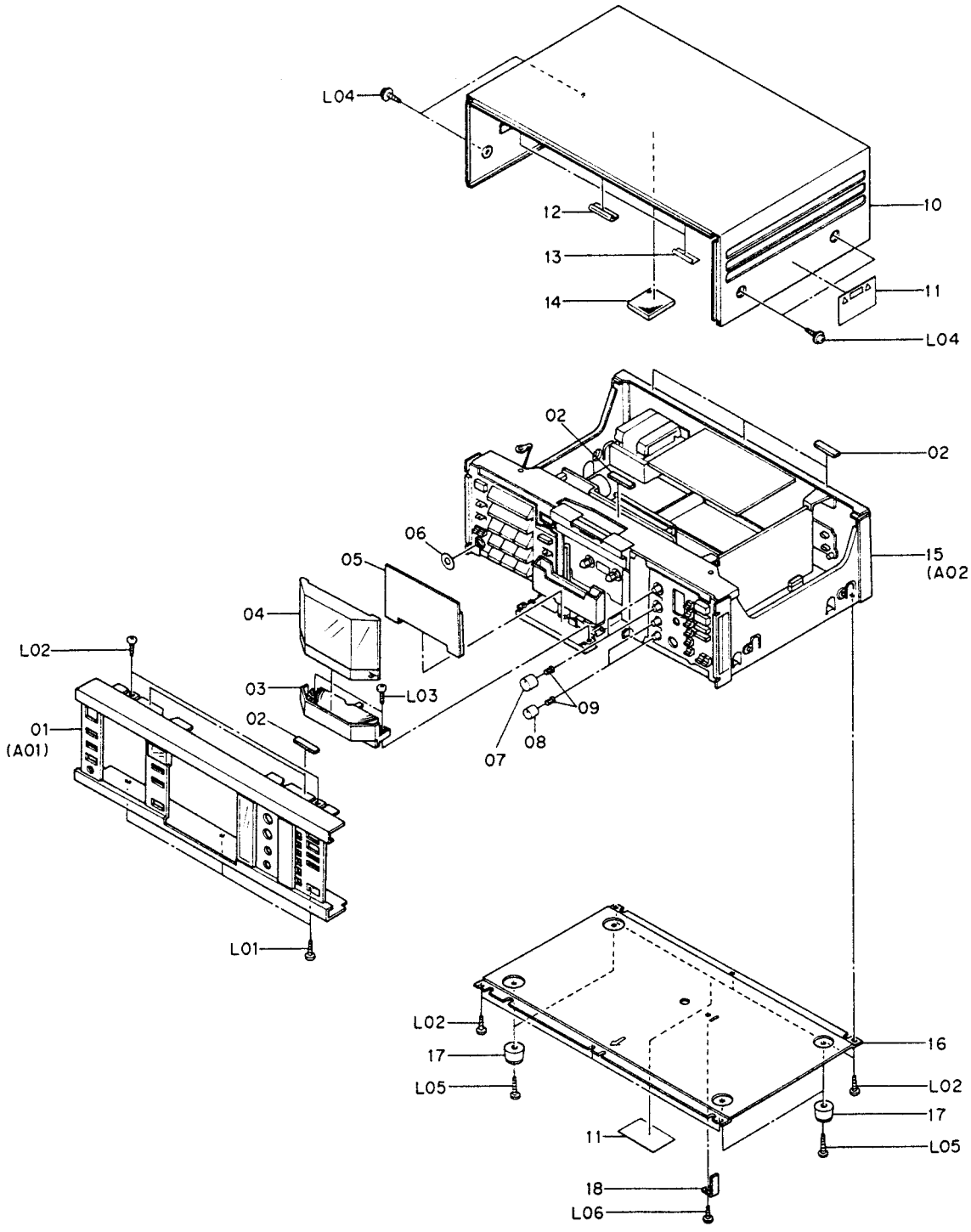


Fig. 5.1

5.2. Front Panel Ass'y (A01)

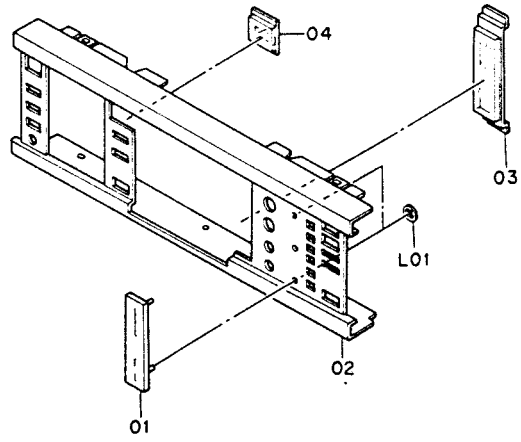


Fig. 5.2

Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis	
01	HA04562A	Front Panel Ass'y RX505	1
	HA04566A	Front Panel Ass'y RX505E	1
02	0J04550A	Top Cover Cushion	6
03	HA04564A	CAT Bottom Ass'y	1
04	0H04345A	CAT Window	1
05	DA03735A	Caution Card Ass'y	1
06	0J04815A	Headphone Himelon	1
07	0H04343A	Input Volume Knob	2
08	0H04342A	Output Volume Knob	2
09	0H03737A	Volume Knob Base	4
10	0H04349A	Top Cover	1
11	0M04377A	Caution Label	2
12	0J04715A	Top Cover Cushion	1
13	0J04080A	Top Cover Himelon	2
14	0J04753A	Vibration Isolating Rubber	1
15	—	Chassis Ass'y	1
16	0J04737A	Bottom Cover	1
17	0J03564A	Leg T-H	4
18	0C08583C	Slide Locker	1
L01	0E00921A	BT 3x8 ⊕ Binding (Black Chromate)	3
L02	0E00868A	BT 3x8 ⊕ Binding (Chromate)	8
L03	0E00818A	M3x8 ⊕ Binding (Black Chromate)	2
L04	0E03032A	BT 4x8 ⊕ Pan Washer Faced (Black Chromate)	4
L05	0E00865A	BT 3x10 ⊕ Binding (Chromate)	4
L06	0E03144A	BT 3x6 ⊕ Binding (Red Chromate)	1

Schematic Ref. No.	Part No.	Description	Q'ty
A01	HA04562A	Front Panel Ass'y RX505	1
	HA04566A	Front Panel Ass'y RX505E	1
		Serial No.: A80401001 -	
01	0H04335A	Dressing Plate	1
02	0H04332A	Front Panel RX505	1
	0H04355A	Front Panel RX505E	1
03	0H04334A	Meter Cover	1
04	0H04333A	Counter Lens	1
—	0J04627A	Adhesive Tape for Meter IC	2
—	0J04745B	Adhesive Tape for Meter Cover	4
L01	0E00132A	CS-Ring 4mm	2

5.3. Chassis Ass'y (A02)

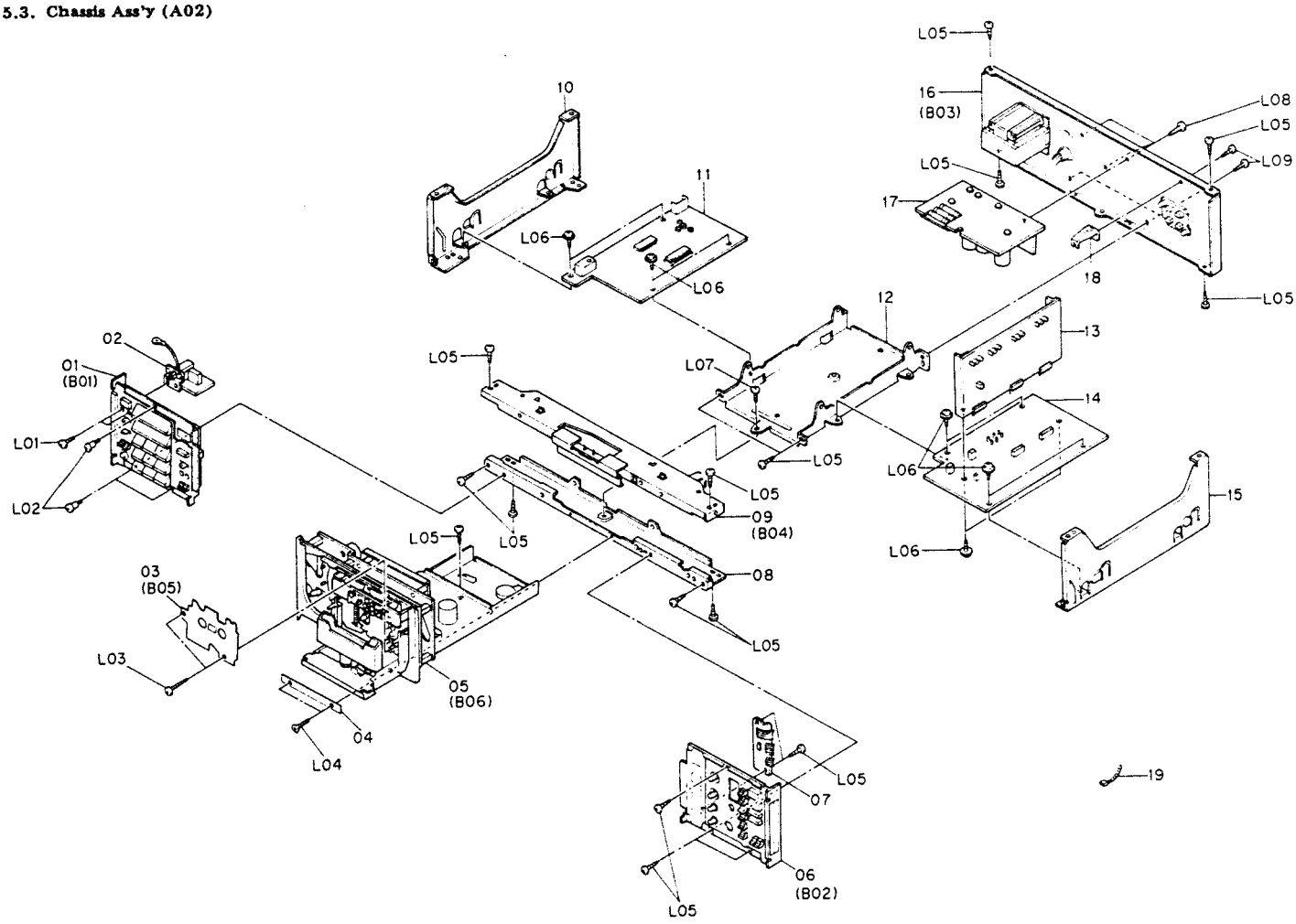


Fig. 5.3

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A02	—	Chassis Ass'y RX505	1	17	BA05174A	DC Power Supply P.C.B. Ass'y	1
	—	Chassis Ass'y RX505E	1	18	0J04807A	Dolby NR P.C.B. Holder	1
				19	0B08515A	Insu-Lock	16
					0J04816A	CAT Mechanism Cushion	1
01	HA04559A	Front Panel Escutcheon L Ass'y	1	—	0B08374A	Fuse 1A (RX505 (U.S.A., Canada & Others))	1
02	BA05188A	Power Switch P.C.B. Ass'y (RX505 (U.S.A. & Canada))	1	—	0B08962A	Fuse 2.5A (RX505 (U.S.A., Canada & Others))	2
	BA05150A	Power Switch P.C.B. Ass'y (RX505 (Japan))	1	—	0B08686A	Fuse 1A (RX505 (Japan))	1
	BA05189A	Power Switch P.C.B. Ass'y (RX505 (Others & Australia) & RX505E)	1	—	0B08961A	Fuse 2.5A (RX505 (Japan))	2
				—	0B08347U	Fuse 1AT (RX505 (Australia) & RX505E)	2
03	CA08507A	Cover Plate Ass'y	1	—	0B08457A	Fuse 500mAT (RX505 (Australia) & RX505E)	1
04	0J04757A	CAT Mechanism Himelon	1				
05	CA08501A	Synthesis Mechanism Ass'y	1	—	0M04190A	Fuse Label 1A 250V (RX505 (U.S.A., Canada, Others & Japan))	1
06	HA04560A	Front Panel Escutcheon R Ass'y	1				
07	BA05142A	Indicator P.C.B. Ass'y	1				
08	0J04732D	Bottom Angle	1	—	0M04409A	Fuse Label 2.5A 250V (RX505 (U.S.A., Canada & Others))	2
09	HA04574A	Upper Angle Ass'y	1				
10	0J04750A	Side Chassis L	1	—	0M04096C	Fuse Label 500mAT (RX505 (Australia) & RX505E)	1
11	BA05173A	Logic P.C.B. Ass'y	1				
12	0J04749A	Center Chassis Ass'y	1	—	0M04191A	Fuse Label 1AT 250V (RX505 (Australia) & RX505E)	2
13	BA05171A	Dolby NR P.C.B. Ass'y	1				
14	BA05165A	Main P.C.B. Ass'y	1	—	0B08349B	Fuse Clip (RX505 (Australia) & RX505E)	6
15	0J04751A	Side Chassis R	1				
16	HA04545A	Rear Panel Ass'y RX505 (U.S.A. & Canada)	1	—	0M04343A	Fuse Caution (RX505 (U.S.A. & Canada))	1
	HA04546A	Rear Panel Ass'y RX505 (Japan)	1				
	HA04547A	Rear Panel Ass'y RX505 (Others)	1	L01	0E00818A	M3x8 ⊕ Binding (Black Chromate)	2
	HA04548A	Rear Panel Ass'y RX505 (Australia)	1	L02	0E03135B	M3x8 ⊕ Binding (Half threaded)	3
				L03	0E00950A	BT 3x14 ⊕ Pan (Black Chromate)	2
	HA04549A	Rear Panel Ass'y RX505E (220V Class 2)	1	L04	0E03115A	BT 3x8 ⊕ Countersunk (Black Chromate)	2
	HA04544A	Rear Panel Ass'y RX505E (UK)	1				

5.4. Front Panel Escutcheon L Ass'y (B01)

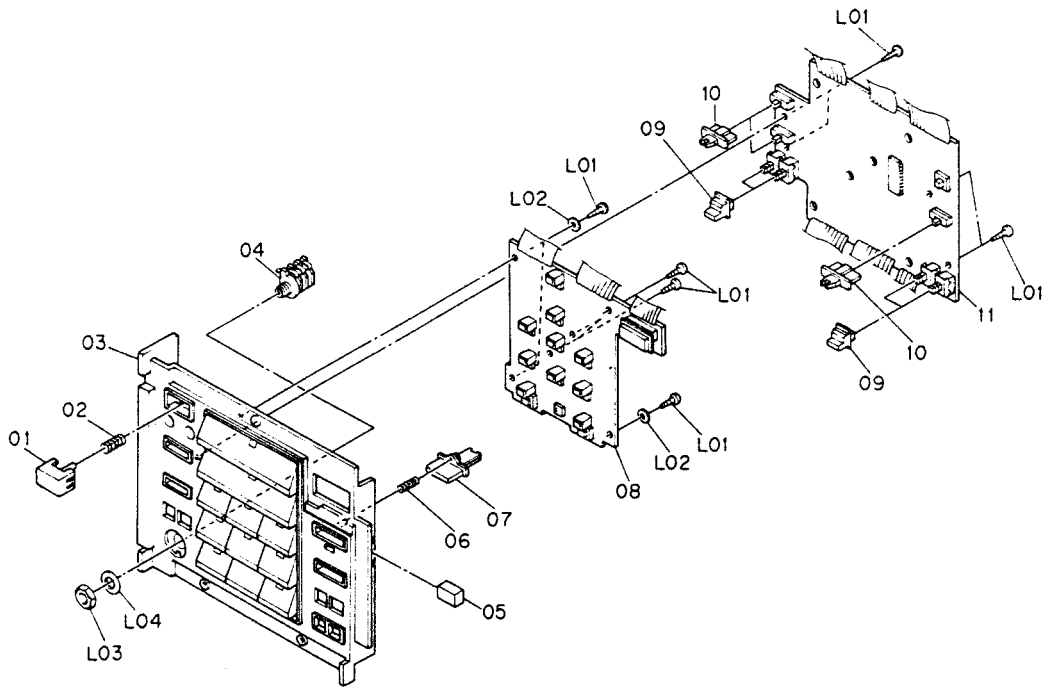


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Q'ty
L05	0E00868A	BT 3x8 ⊕ Binding (Chromate)	18
L06	0E03157A	BT 3x8 ⊕ Binding Washer Faced (Chromate)	10
L07	0E00857A	BT 3x6 ⊕ Binding (Chromate)	1
L08	0E00915A	BT 4x8 ⊕ Binding (Black Chromate)	3
L09	0E00921A	BT 3x8 ⊕ Binding (Black Chromate)	3

Schematic Ref. No.	Part No.	Description	Q'ty
B01	HA04559A	Front Panel Escutcheon L Ass'y Serial No.: A80401001 -	1
01	0H04327A	Power Switch Button	1
02	0J04794A	Spring for Power Switch	1
03	HA04561B	Front Panel Escutcheon L Sub Ass'y	1
04	0B08511A	Headphone Jack	1
05	0C08611A	Cushion B	1
06	0J04640A	Spring for Reset Switch	1
07	0H04328A	Reset Button	1
08	BA05175A	Control P.C.B. A Ass'y	1
09	0H04337A	Push Switch Button	4
10	0H04330A	Slide Switch Knob	3
11	BA05187A	Control P.C.B. B Ass'y	1
L01	0E00868A	BT 3x8 ⊕ Binding (Chromate)	L0
L02	0E00157A	Plastic Washer 3mm	3
L03	—	Headphone Jack Nut	(1)
L04	—	Headphone Washer	(1)

5.5. Front Panel Escutcheon R Ass'y (B02)

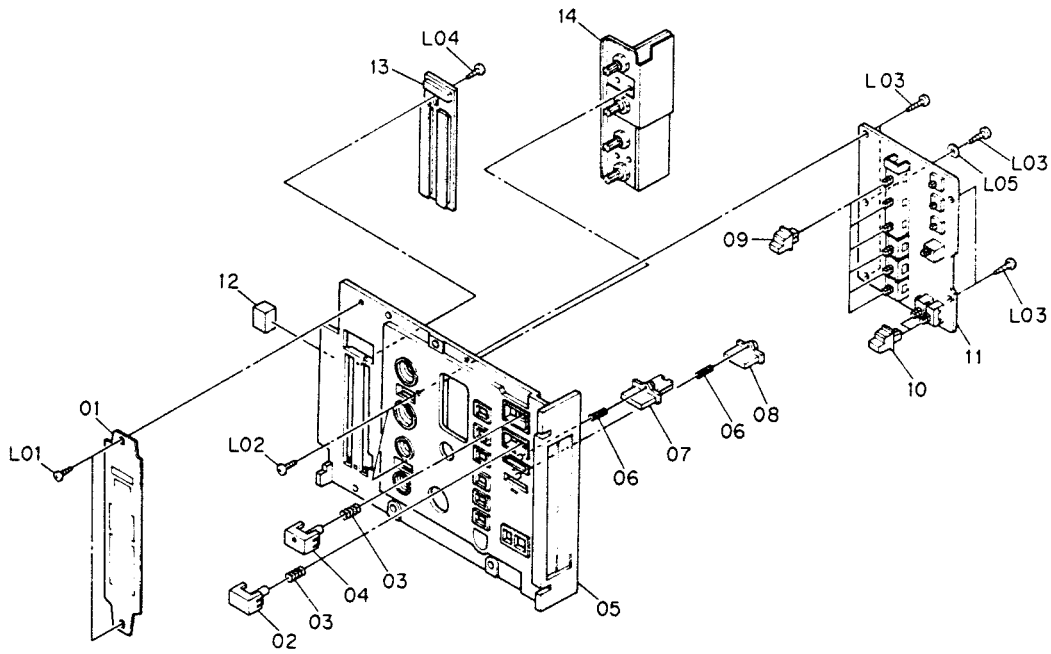


Fig. 5.5

5.6. Rear Panel Ass'y (B03)

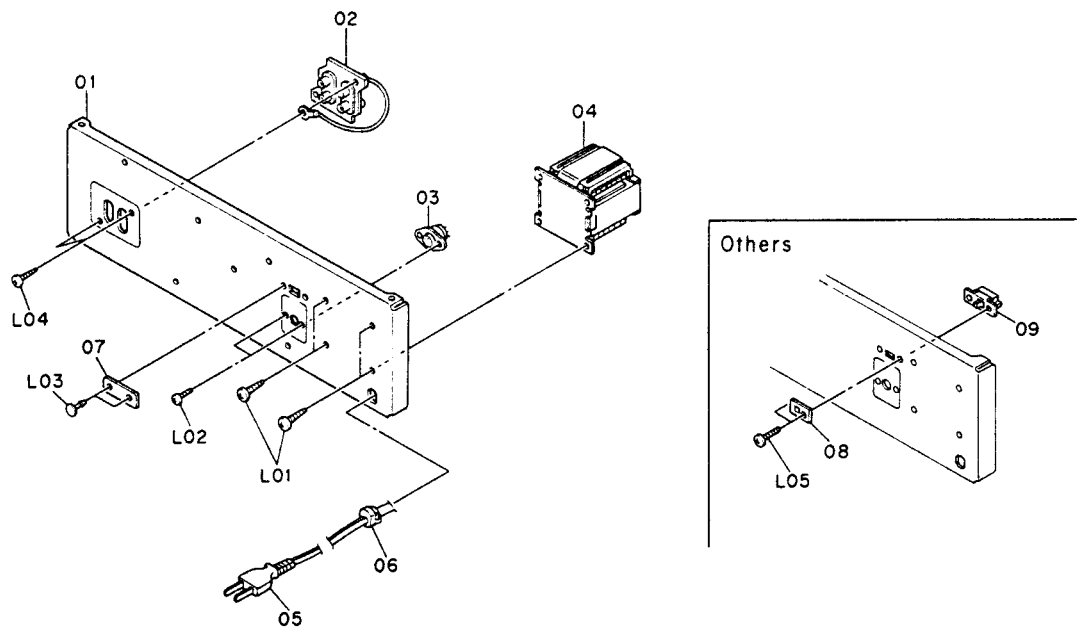


Fig. 5.6

Schematic Ref. No.	Part No.	Description	Q'ty
B02	HA04560A	Front Panel Escutcheon R Ass'y Serial No.: A80401001 -	1
01	0H04341A	Meter Scale	1
02	0H04340A	Reverse Button	1
03	0J04794A	Spring for Eject Switch	2
04	0H04339A	Eject Button	1
05	0H04336A	Front Panel Escutcheon R	1
06	0J04640A	Spring for A.R.S. Switch	2
07	0H04328A	A.R.S. Button	1
08	0H04338A	Monitor Switch Button	1
09	0H04370A	Selector Button	6
10	0H04337A	Push Switch Button	2
11	BA05166A	Switch P.C.B. Ass'y	1
12	0C08611A	Cushion B	1
13	BA05214A	Indicator P.C.B. Ass'y & Display Unit	1
14	BA05167A	Volume P.C.B. Ass'y	1
L01	0E00873A	BT 2.6x5 ⊕ Binding (Chromate)	2
L02	0E00896A	M3x6 ⊕ Binding (Chromate)	2
L03	0E00868A	BT 3x8 ⊕ Binding (Chromate)	5
L04	0E00857A	BT 3x6 ⊕ Binding (Chromate)	1
L05	0E00157A	Plastic Washer 3mm	1
B03	HA04545A	Rear Panel Ass'y RX505 (U.S.A. & Canada)	1
	HA04546A	Rear Panel Ass'y RX505 (Japan)	1
	HA04547A	Rear Panel Ass'y RX505 (Others)	1
	HA04548A	Rear Panel Ass'y RX505 (Australia)	1
	HA04544A	Rear Panel Ass'y RX505E (UK)	1
	HA04549A	Rear Panel Ass'y RX505E (220V Class 2) Serial No.: A80401001 -	1
01	0H04351C	Rear Panel RX505	1
	0H04357C	Rear Panel RX505E	1
02	0B81001A	4P Pin Jack	1
03	BA05198A	8P DIN Socket Ass'y (Consisting of followings)	1
	(0B08584A)	8P DIN Socket	(1)
	(0B08752A)	8P-H Connector	(1)
04	0B50019A	Power Transformer 120V (RX505 (U.S.A. & Canada))	1
	0B50018A	Power Transformer 100V (RX505 (Japan))	1
	0B50021A	Power Transformer 115V/230V (RX505 (Others))	1
	0B50020A	Power Transformer 220V/240V (RX505 (Australia) & RX505E)	1
05	0B08533A	Power Cord (RX505 (U.S.A., Canada & Others))	1
	0B08219A	Power Cord (RX505 (Japan))	1
	0B05241A	Power Cord (RX505 (Australia))	1
	0B08093U	Power Cord (RX505E (220V Class 2))	1
	0B08348A	Power Cord (RX505E (UK))	1
06	0B08037U	Cord Bushing C (RX505 & RX505E (220V Class 2))	1
	0B08351A	Cord Bushing 4K-4 (RX505E (UK))	1
07	0J04601B	Switch Cover (RX505 (U.S.A., Canada, Japan & Australia) & RX505E)	1
08	0M03948A	Voltage Lock Plate D (RX505 (Others))	1
09	0B07092U	Voltage Selector Switch (RX505 (Others))	1
—	0F01071A	Free-up Belt (RX505 (Australia) & RX505E)	1
L01	0E00915A	BT 4x8 ⊕ Binding (Black Chromate)	4
L02	0E03072A	M2.6x6 ⊕ Binding (Black Chromate)	2
L03	0B08583A	Plastic Rivet (RX505 (U.S.A., Canada, Japan & Australia & RX505E))	2
L04	0E00921A	BT 3x8 ⊕ Binding (Black Chromate))	2
L05	0E00818A	M3x8 ⊕ Binding (Black Chromate) (RX505 (Others))	2

5.7. Upper Angle Ass'y (B04)

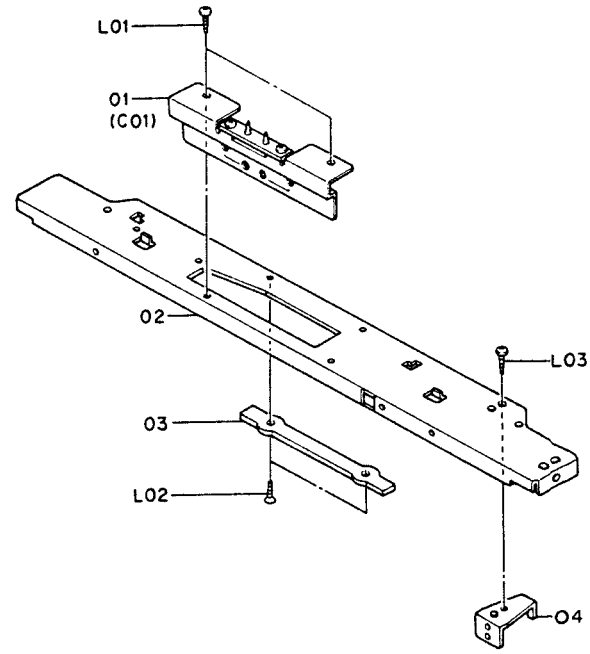


Fig. 5.7

5.8. Cover Plate Ass'y (B05)

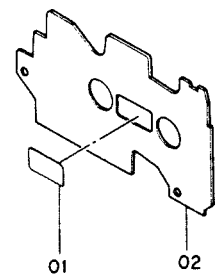


Fig. 5.8

Schematic Ref. No.	Part No.	Description	Q'ty
B04	HA04574A	Upper Angle Ass'y Serial No.: A80401001 -	1
01	HA04575A	Lid Cover Ass'y	1
02	0J04788B	Upper Angle	1
03	0J04808A	Holder Plate	1
04	0J04807A	Dolby NR P.C.B. Holder	1
L01	0E00868A	BT 3x8 ⊕ Binding (Chromate)	2
L02	0E03073A	BT 3x6 ⊕ Countersunk (Black Chromate)	2
L03	0E00818A	M3x8 ⊕ Binding (Black Chromate)	1
B05	CA08507A	Cover Plate Ass'y Serial No.: A80401001 -	1
01	0M04392A	Cassette Label (Gold)	1
02	0C08553A	Cover Plate	1

5.9. Synthesis Mechanism Ass'y (B06)

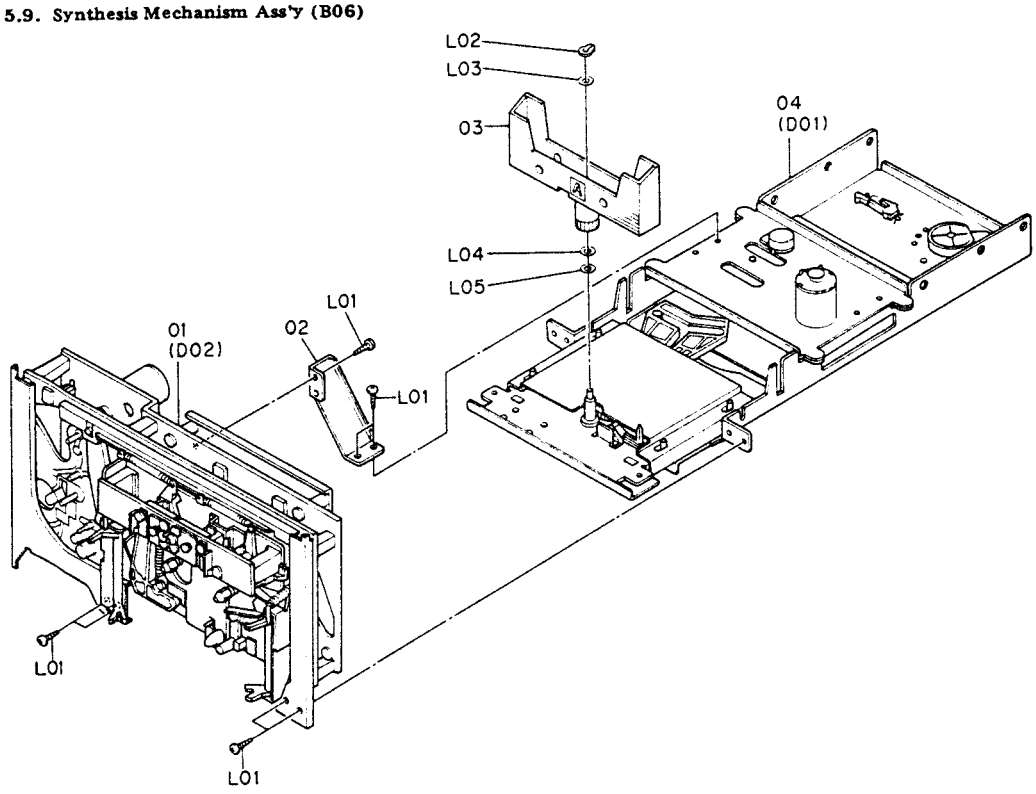


Fig. 5.9

5.10. Lid Cover Ass'y (C01)

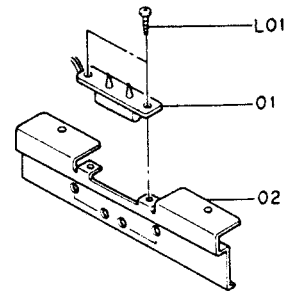


Fig. 5.10

Schematic Ref. No.	Part No.	Description	Q'ty
B06	CA08501A	Synthesis Mechanism Ass'y Serial No.: A80401001 -	1
01	CA08520A	Mechanism Ass'y RX505	1
02	0C08597A	Rear Holder	1
03	CA08511A	Cassette Case Ass'y	1
04	CA08508A	RN Mechanism Ass'y	1
L01	0E00857A	BT 3x6 ⊕ Binding (Chromate)	7
L02	0E00837A	Stopper Ring 3mm	1
L03	0E00254A	Mylar Washer 3.1x7x0.2	1
L04	0C08347A	Mylar Washer 3.1mm (0.25t)	1
L05	0C08594A	Mylar Washer 3x0.5	1
—	0E03163A	Mylar Washer 3x0.13	1
C01	HA04575A	Lid Cover Ass'y Serial No.: A80401001 -	1
01	BA05143A	Lid Lamp P.C.B. Ass'y	1
02	0H04377A	Lamp Cover	1
L01	0E03070A	M2.6x6 ⊕ Binding (Chromate)	2
D01	CA08508A	RN Mechanism Ass'y Serial No.: A80401001 -	1
01	CA08526A	Motor Holder Ass'y	1
02	0C08615A	Slide Cover B	1
03	0C08099B	Cam Motor Belt	1
04	0C08525A	SD Pulley	1
05	CA08509A	Slide Chassis Ass'y	1
06	0C08133A	Skeleton Switch	1
07	0B82203A	2P-H Connector	1
08	CA08488A	Main Chassis Ass'y	1
L01	0E00868A	BT 3x8 ⊕ Binding (Chromate)	4
L02	0E03022A	BT 2x4 ⊕ Binding (Black Chromate)	2
L03	0E00222A	E-Ring 2mm	1
L04	0C08594A	Mylar Washer 3x0.5	1
L05	0E00181A	E-Ring 3mm	4
L06	0C08593A	Mylar Washer 4x0.5	8
L07	0E00840A	BT 2x8 ⊕ Pan (Chromate)	2

Schematic Ref. No.	Part No.	Description	Q'ty
D02	CA08520A	Mechanism Ass'y RX505 Serial No.: A80401001 -	1
01	0C08563B	Mechanism Holder L	1
02	0C08564B	Mechanism Holder R	1
03	CA08521A	Sub Mechanism Ass'y	1
L01	0E03060A	BT 4x16 ⊕ Binding (Toothed Lock Washer faced)	1
L02	0E03059A	BT 4x15 ⊕ Binding (Toothed Lock Washer faced)	3
E01	CA08526A	Motor Holder Ass'y Serial No.: A80401001 -	1
01	0C08527A	PM Gear	1
02	0C08565B	Motor Holder	1
03	CA08527A	Drive Motor Ass'y	1
04	0B07240A	Volume 10K (B)	1
05	0B82201A	5P-H Connector	1
L01	0E00993A	Stopper Ring 6mm	1
L02	—	Volume Nut	(1)
L03	—	Volume Washer	(1)
L04	0E00120A	M2.6x3 ⊕ Pan (Chromate)	2

5.11. RN Mechanism Ass'y (D01)

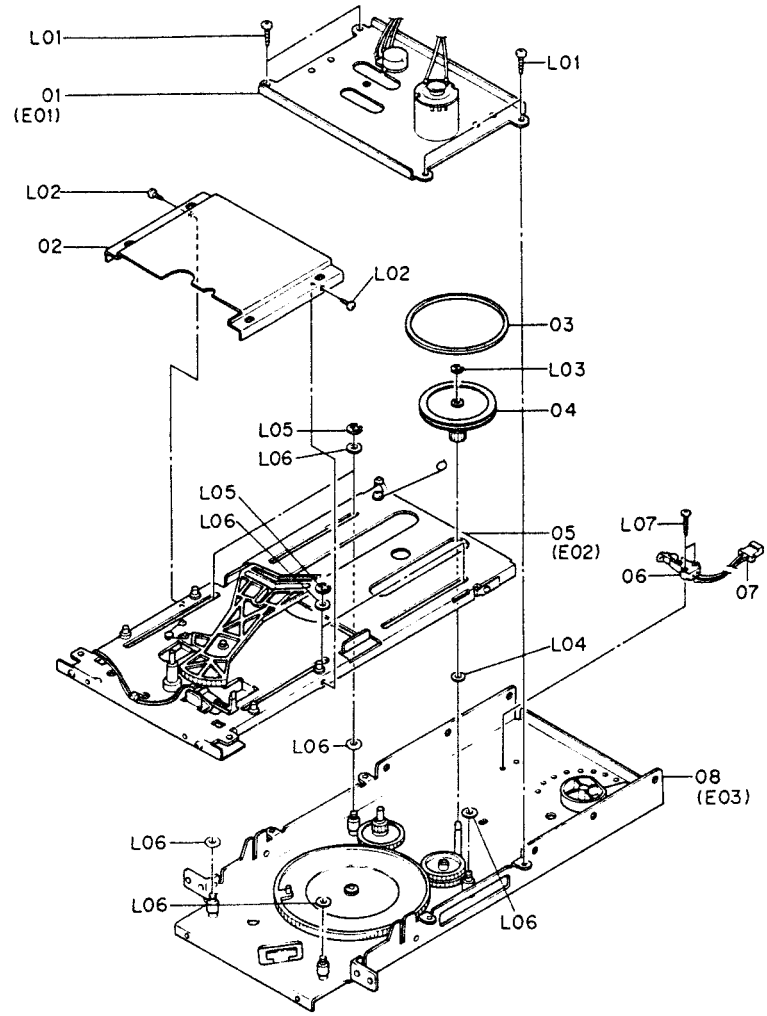


Fig. 5.11

5.12. Mechanism Ass'y RX505 (D02)

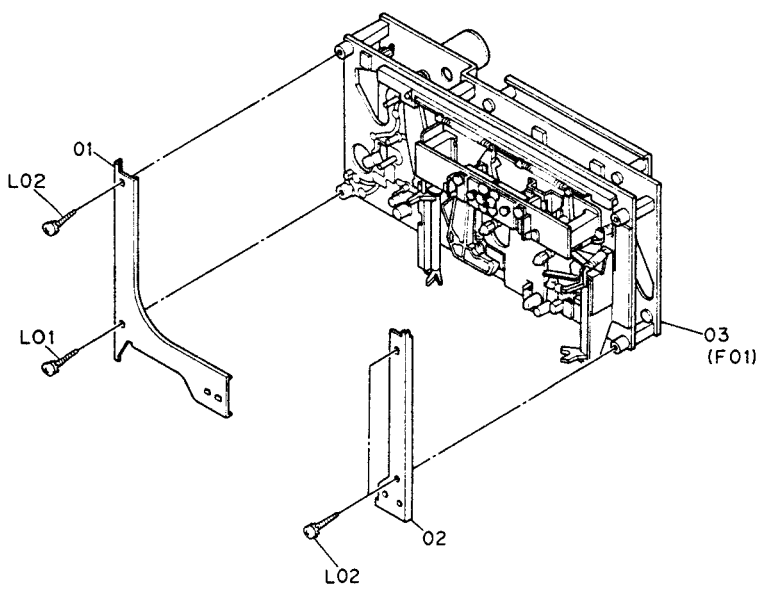


Fig. 5.12

5.13. Motor Holder Ass'y (E01)

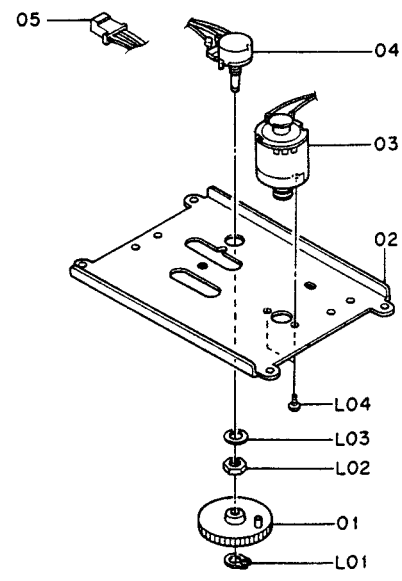


Fig. 5.13

5.14. Slide Chassis Ass'y (E02)

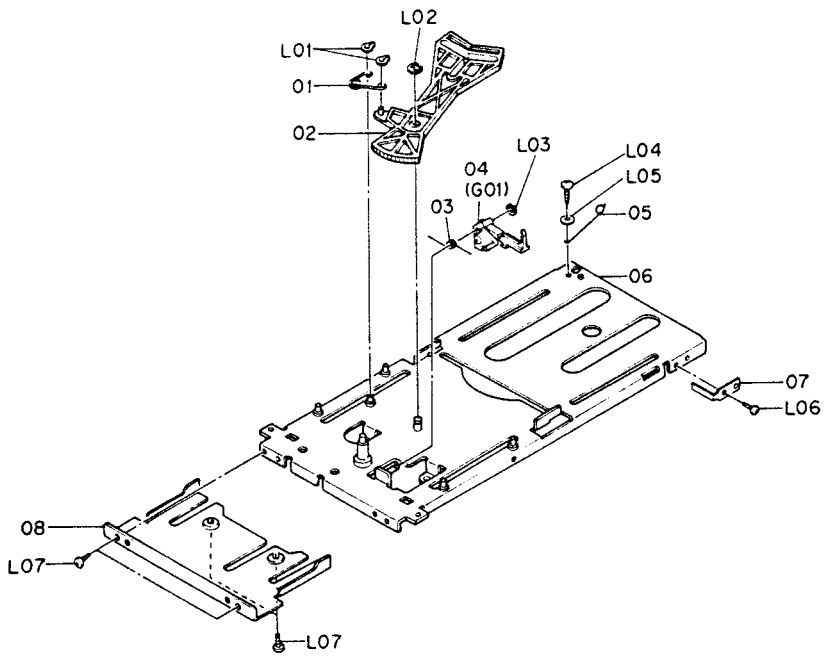


Fig. 5.14

5.15. Main Chassis Ass'y (E03)

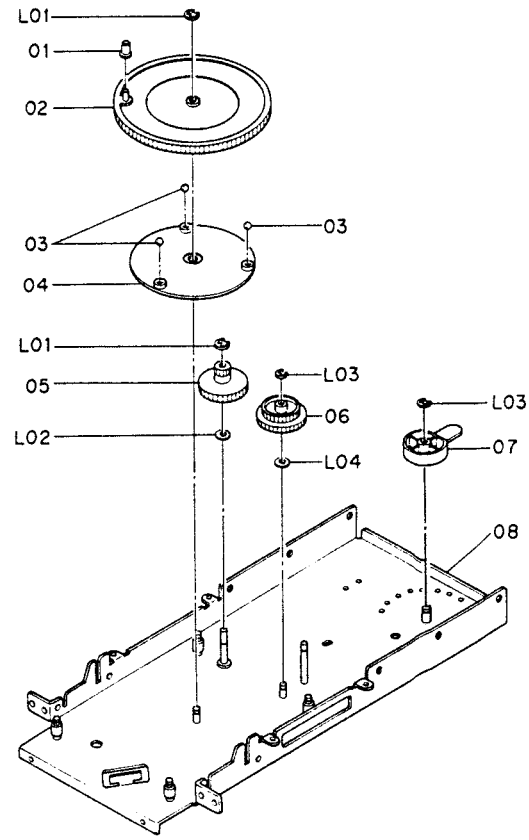


Fig. 5.15

Schematic Ref. No.	Part No.	Description	Q'ty
E02	**CA08509A**	**Slide Chassis Ass'y** Serial No.: A80401001 -	**1**
01	0C08548A	R Arm Spring	1
02	0C08529A	R Arm	1
03	0C08547A	Record Protector Switch Spring	1
04	CA08510A	Record Protector Switch Ass'y	1
05	0C08596A	WH Rod	1
06	CA08475D	Slide Chassis Sub Ass'y	1
07	0C08598A	SS Plate	1
08	0C08552A	Under Cover	1
L01	0E00837A	Stopper Ring 3mm	2
L02	0E00181A	E-Ring 3mm	1
L03	0E00042A	E-Ring 1.5mm	1
L04	0E00857A	BT 3x6 ⊕ Binding (Chromate)	1
L05	0E00637A	Washer 3.3x7x0.5	1
L06	0E03022A	BT 2x4 ⊕ Binding (Black Chromate)	1
L07	0E03133A	BT 2.6x4 ⊕ Binding (Black Chromate)	4
E03	**CA08488A**	**Main Chassis Ass'y** Serial No.: A80401001 -	**1**
01	0C08584A	Collar	1
02	0C08523A	Main Gear	1
03	0C08550A	Ball 4mm	3
04	0C08528A	Retainer	1
05	0C08526A	PMD Gear	1
06	0C08524A	SD Gear	1
07	0C08543A	SS Cam	1
08	CA08474C	Main Chassis Sub Ass'y	1
L01	0E00181A	E-Ring 3mm	2
L02	0C08593A	Mylar Washer 4x0.5	1
L03	0E00222A	E-Ring 2mm	2
L04	0C08594A	Mylar Washer 3x0.5	1

Schematic Ref. No.	Part No.	Description	Q'ty
F01	**CA08521A**	**Sub Mechanism Ass'y** Serial No.: A80401001 -	**1**
01	CA08017B	Flywheel Holder Ass'y	1
02	0C08096C	Capstan Belt	1
03	CA08534A	Supply Flywheel Ass'y	1
04	0C08021B	Thrust Washer 3.1mm	1
05	CA08533A	Take-up Flywheel Ass'y	1
06	0C08020B	Thrust Washer 2.6mm	1
07	0C08243A	Flange Thrust Cap	2
08	0C08244A	Flange Thrust Spring	2
09	CA08513A	Sub Mechanism Chassis Ass'y	1
10	0C08099B	Control Motor Belt	1
11	CA08522B	Main Mechanism Chassis Ass'y	1
12	CA08505A	Lock Arm L Ass'y	1
13	CA08506A	Lock Arm R Ass'y	1
14	0B82199A	6P-H Connector	1
15	0B82204A	3P-H Connector	1
16	0B08515A	Insu-Lock	10
17	0C08620A	Head Height Adjustment Gear	2
L01	0E00833A	BT 3x20 ⊕ Pan (Chromate)	3
L02	0E00834A	BT 3x30 ⊕ Pan (Chromate)	1
L03	0E00178A	Washer 3.3x8x0.5	2
L04	0E00835A	BT 3x25 ⊕ Pan (Chromate)	1
L05	0E00883A	BT 3x18 ⊕ Pan (Chromate)	5
L06	0E00846A	BT 3x8 ⊕ Pan (Chromate)	3

5.16. Sub Mechanism Ass'y (F01)

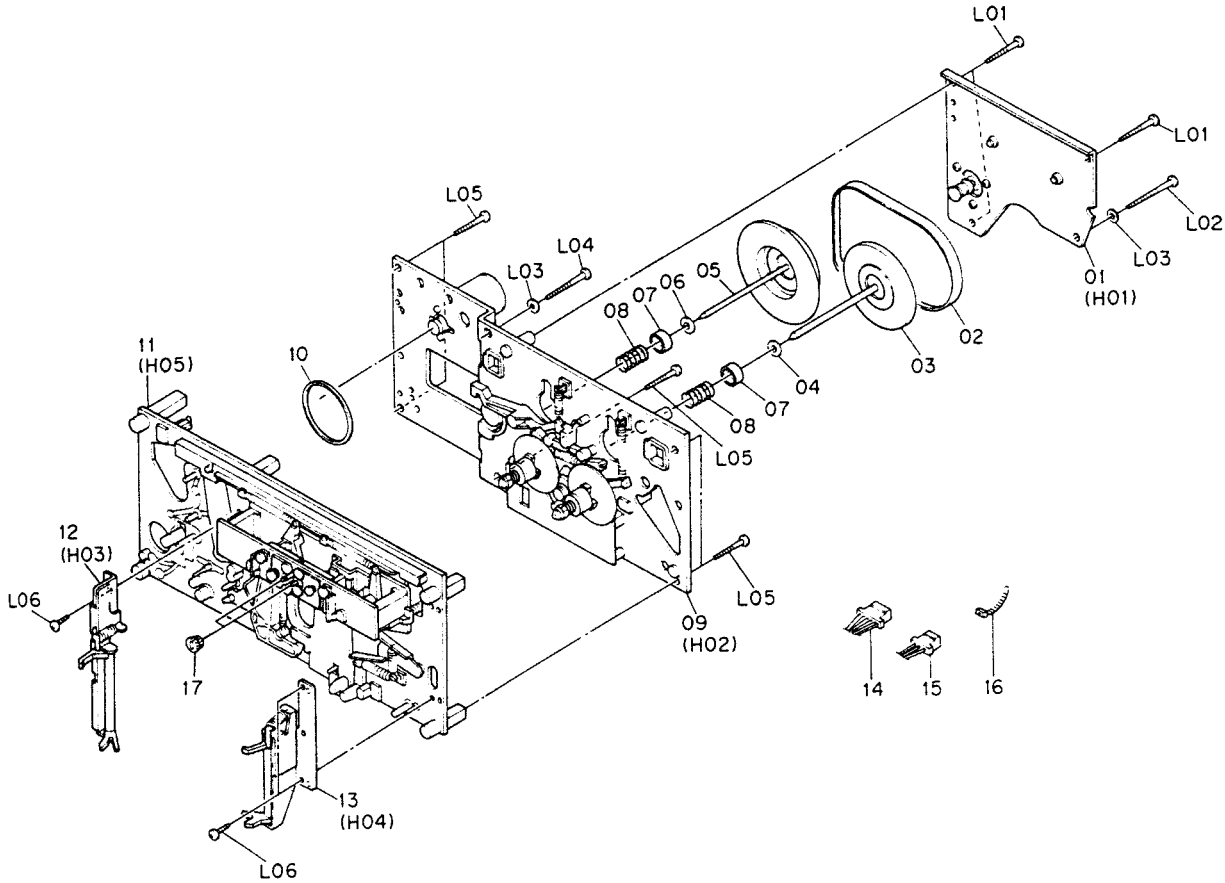


Fig. 5.16

5.17. Record Protector Switch Ass'y (G01)

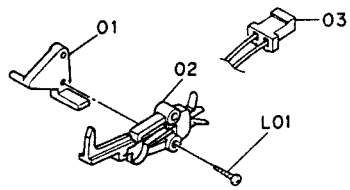


Fig. 5.17

5.18. Flywheel Holder Ass'y (H01)

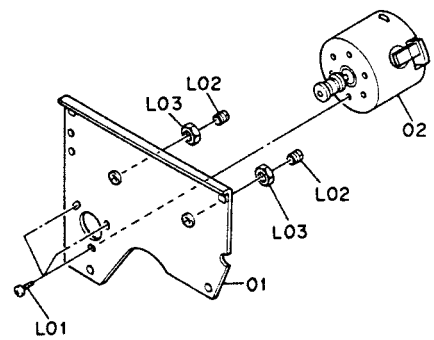


Fig. 5.18

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
G01	CA08510A	Record Protector Switch Ass'y Serial No.: A80401001 -	1	H01	CA08017B	Flywheel Holder Ass'y Serial No.: A80401001 -	1
01	0C08539A	Record Protector Switch Arm	1	01	0C08013I	Flywheel Holder	1
02	0C08540B	Skeleton Switch	1	02	CA08106B	Capstan Motor Ass'y	1
03	0B82075B	2P-H Connector	1	L01	0E00226A	M2.6x4 ⊕ Pan (Chromate)	3
L01	0E00840A	BT 2x8 ⊕ Pan (Chromate)	1	L02	0C08068C	Thrust Screw	2
				L03	0C03857A	Lock Nut	2

5.19. Sub Mechanism Chassis Ass'y (H02)

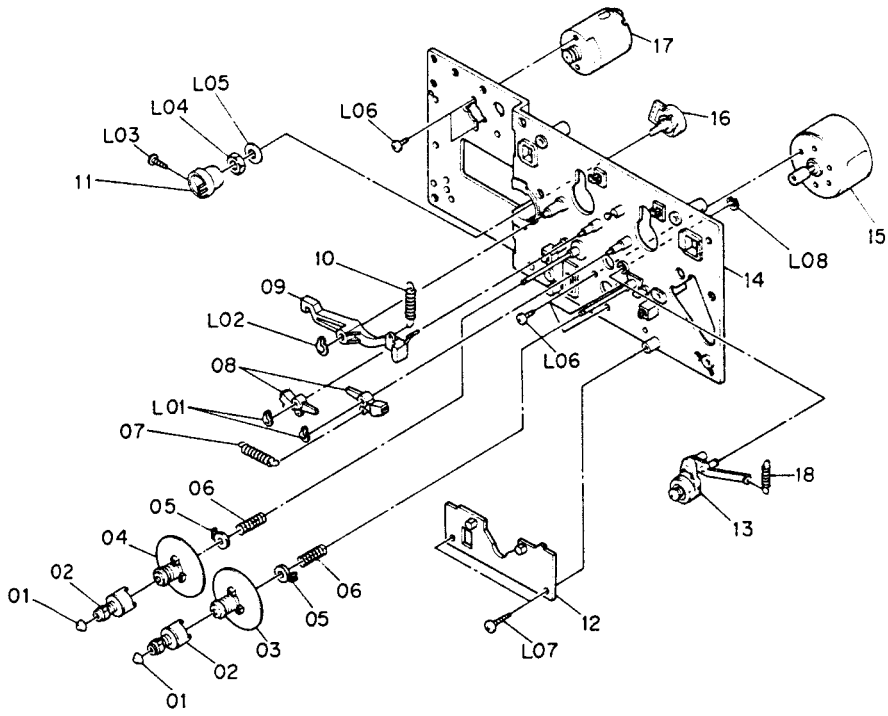


Fig. 5.19

5.20. Lock Arm L Ass'y (H03)

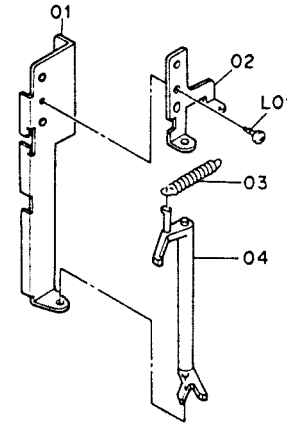


Fig. 5.20

5.21. Lock Arm R Ass'y (H04)

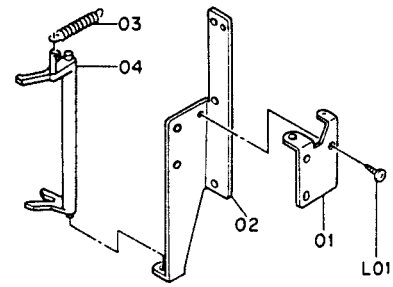


Fig. 5.21

Schematic Ref. No.	Part No.	Description	Q'ty
H02	**CA08513A**	**Sub Mechanism Chassis Ass'y** Serial No.: A80401001 -	**1**
01	0C08039B	Reel Hub Head	2
02	CA08038B	Reel Hub Pulley B Ass'y	2
03	CA08515A	Reel Hub Supply Ass'y	1
04	CA08514A	Reel Hub Take-up Ass'y	1
05	CA08039A	Back Tension Ass'y	2
06	0C08610A	Back Tension Spring D	2
07	0C08129B	Brake Arm Spring	1
08	CA08042A	Brake Arm Ass'y	2
09	0C08030C	Brake Drive Arm	1
10	0C08128A	Brake Drive Arm Spring	1
11	0C08053B	Volume Coupler	1
12	BA05199A	TS Pulse P.C.B. Ass'y	1
13	CA08193A	Idler Arm Ass'y	1
14	CA08194A	Sub Chassis Ass'y B	1
15	CA08242A	Reel Motor Ass'y	1
16	0B07240A	Volume 10K (B)	1
17	CA08527A	Control Motor Ass'y	1
18	0C08266A	Idler Arm Spring B	1
L01	0E00837A	Stopper Ring 3mm	2
L02	0E00838A	Stopper Ring 4mm	1
L03	0E00859A	BT 2.6x6 ⊕ Binding (Chromate)	1
L04	—	Volume Nut	(1)
L05	—	Volume Washer	(1)
L06	0E00226A	M2.6x4 ⊕ Pan (Chromate)	5
L07	0E00831A	BT 3x10 ⊕ Pan (Chromate)	2
L08	0E00698A	E-Ring 2.5mm	1
H03	**CA08505A**	**Lock Arm L Ass'y** Serial No.: A80401001 -	**1**
01	0C08555B	Lock Arm Holder Left A	1
02	0C08556A	Lock Arm Holder Left B	1
03	0C08546A	Lock Arm Spring	1
04	0C08613A	Lock Arm Left	1
—	0C08599A	Cushion	1
L01	0E00941A	BT 3x5 ⊕ Binding (Black Chromate)	1

Schematic Ref. No.	Part No.	Description	Q'ty
H04	**CA08506A**	**Lock Arm R Ass'y** Serial No.: A80401001 -	**1**
01	0C08558A	Lock Arm Holder Right B	1
02	0C08557A	Lock Arm Holder Right A	1
03	0C08546A	Lock Arm Spring	1
04	0C08614A	Lock Arm Right	1
—	0C08599A	Cushion	1
L01	0E00941A	BT 3x5 ⊕ Binding (Black Chromate)	1
H05	**CA08522B**	**Main Mechanism Chassis Ass'y** Serial No.: A80401001 -	**1**
01	CA08523A	Head Mount Base Ass'y	1
02	0C08313A	Pressure Roller Arm Bushing	2
03	CA08464A	Supply Pressure Roller Ass'y	1
04	0C08121A	Supply Pressure Roller Spring	1
05	0C08122C	Supply Pressure Roller Thrust Spring	1
06	CA08465A	Take-up Pressure Roller Ass'y	1
07	0C08250A	Supply Pressure Roller Spring B	1
08	0C08183B	Take-up Pressure Roller Thrust Spring	1
09	CA08530A	Head Base Ass'y	1
10	0C08086B	Head Base Roller	3
11	0C08182A	Pressure Roller Drive Bar B	1
12	CA08027A	Head Base Drive Arm Ass'y	1
13	GA02103A	EOK Erase Head	1
14	CA08026A	Pressure Roller Drive Arm Ass'y	1
15	0C08544B	Cassette Hold Arm	1
16	0C08120A	Cassette Hold Arm Spring	1
17	CA08196A	Back Tension Arm Ass'y	1
18	0C08254A	Back Tension Arm Collar	1
19	CA08347A	Main Chassis Ass'y	1
20	CA08028A	Counter-Load Arm Ass'y	1
21	0C08371A	Back Tension Arm Spring	1
22	0C08152A	Counter-Load Arm Spring Tube	1
23	0C08029H	Control Cam	1
24	0C08186A	Cam Drive Gear	1
25	CA08024A	Capstan Flange ϕ2.5 Ass'y	1

5.22. Main Mechanism Chassis Ass'y (H05)

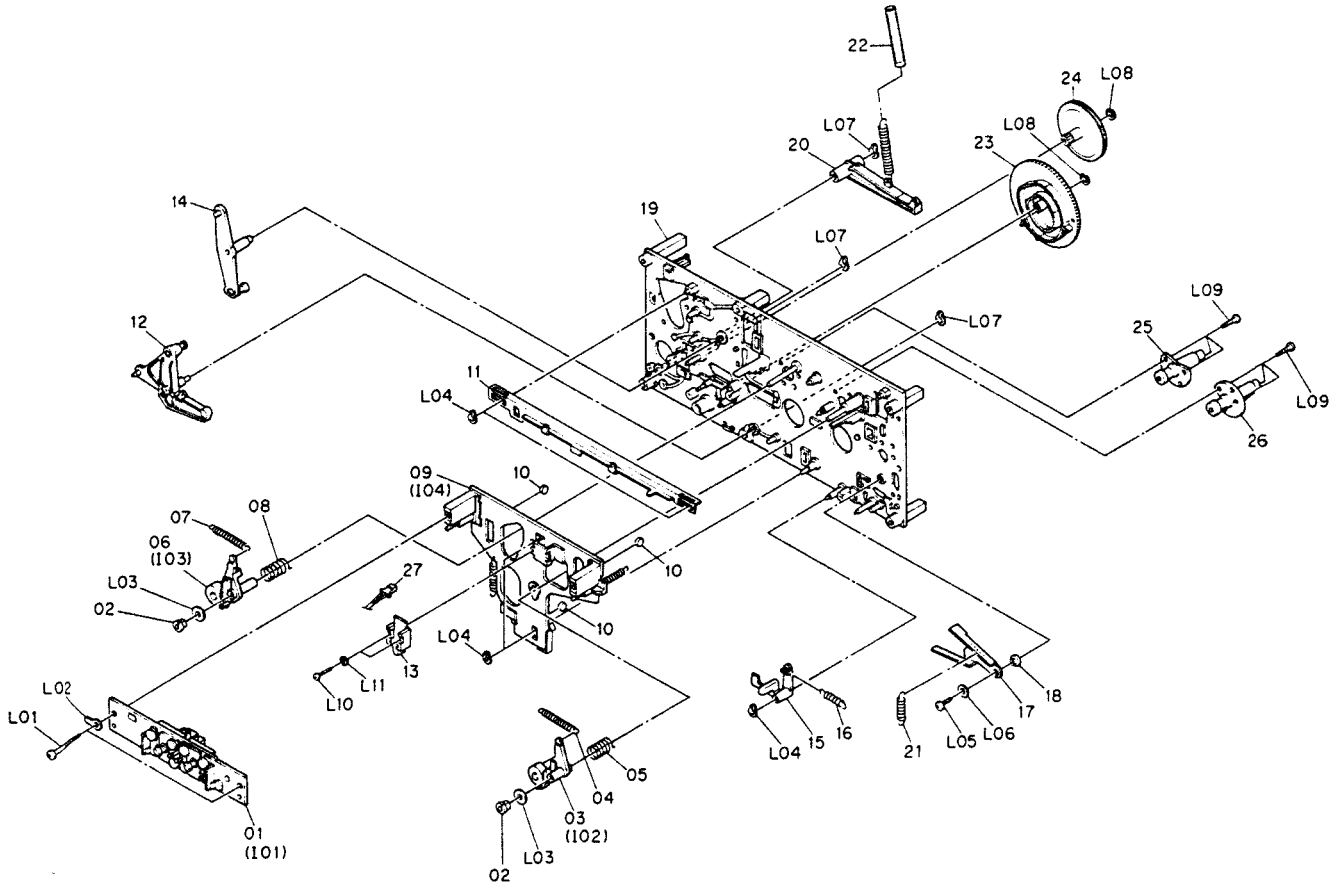


Fig. 5.22

Schematic Ref. No.	Part No.	Description	Q'ty
26	CA08023A	Capstan Flange φ3.0 Ass'y	1
27	0B82166B	2P-H Connector	1
L01	0E00834A	BT 3x30 ⊕ Pan (Chromate)	2
L02	0E00895A	Earth Lug 3mm	1
L03	0E00178A	Washer 3.3x8x0.5	2
L04	0E00837A	Stopper Ring 3mm	5
L05	0E00859A	BT 2.6x6 ⊕ Binding (Chromate)	1
L06	0C08255A	Washer 2.6mm	1
L07	0E00838A	Stopper Ring 4mm	3
L08	0E00222A	E-Ring 2mm	2
L09	0E00876A	BT 2.6x8 ⊕ Pan (Chromate)	6
L10	0E00951A	M1.7x7 ⊕ Pan (Black Chromate)	2
L11	0E00952A	Washer 1.7mm	2
I01	CA08523A	Head Mount Base Ass'y Serial No.: A80401001 -	1
01	0C08621A	Head Height Adjustment Screw	4
02	0C08161B	Spring Stopper	2
03	0C08187B	Head Plate Spring	2
04	0C08619A	Azimuth Alignment Screw	2
05	CA08528A	Head Mount Base Sub Ass'y	1
06	CA08525A	P-8L Playback Head Ass'y	1
07	CA08524A	R-8L Record Head Ass'y	1

5.23. Head Mount Base Ass'y (I01)

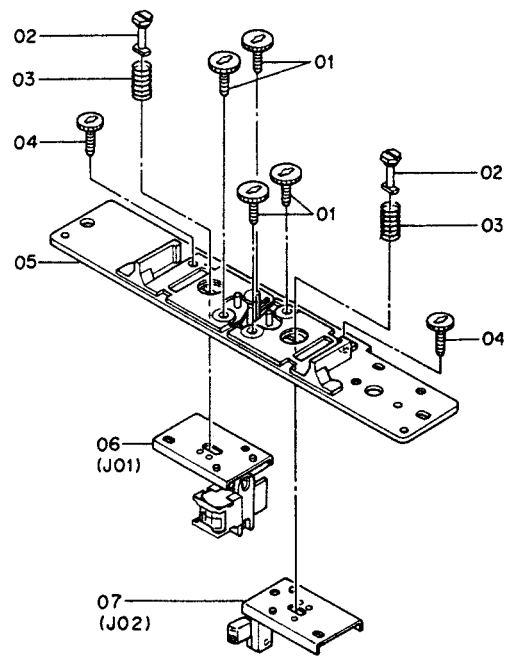


Fig. 5.23

5.24. Supply Pressure Roller Ass'y (I02)

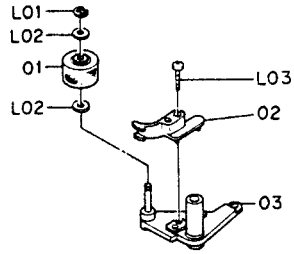


Fig. 5.24

5.25. Take-up Pressure Roller Ass'y (I03)

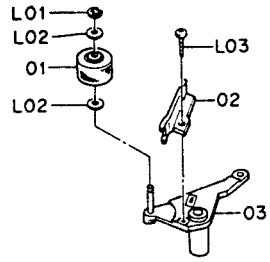


Fig. 5.25

5.26. Head Base Ass'y (I04)

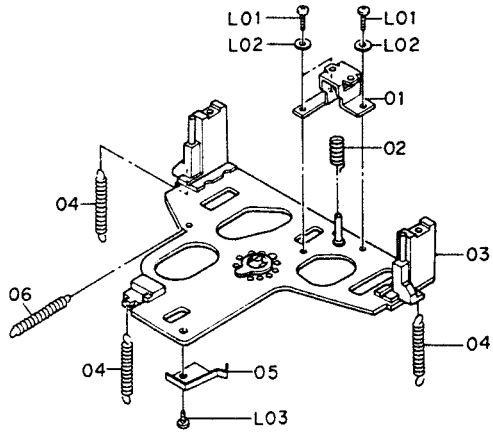


Fig. 5.26

5.27. P-8L Playback Head Ass'y (J01)

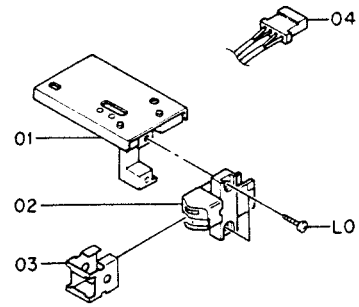


Fig. 5.27

5.28. R-8L Record Head Ass'y (J02)

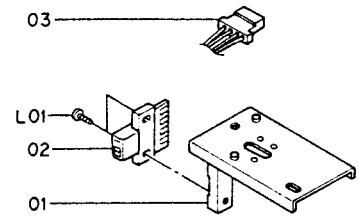


Fig. 5.28

Schematic Ref. No.	Part No.	Description	Q'ty
I02	**CA08464A**	**Supply Pressure Roller Ass'y** Serial No.: A80401001 -	**1**
01	0C08514A	Pressure Roller	1
02	0C08189C	Supply Tape Guide	1
03	CA08061A	Supply Pressure Roller Arm Sub Ass'y	1
L01	0E00042A	E-Ring 1.5mm	1
L02	0C08024A	Washer 2mm	2
L03	0E00788A	BT 2x8 ⊕ Pan (Black Chromate)	1
I03	**CA08465A**	**Take-up Pressure Roller Ass'y** Serial No.: A80401001 -	**1**
01	0C08514A	Pressure Roller	1
02	0C08181C	Take-up Tape Guide	1
03	CA08073B	Take-up Pressure Roller Arm Sub Ass'y	1
L01	0E00042A	E-Ring 1.5mm	1
L02	0C08024A	Washer 2mm	2
L03	0E00788A	BT 2x8 ⊕ Pan (Black Chromate)	1
I04	**CA08530A**	**Head Base Ass'y** Serial No.: A80401001 -	**1**
01	0C08158D	Erase Head Hold Plate	1
02	0C08166A	Erase Head Hold Plate Spring	1
03	CA08003R	Head Base Ass'y	1
04	0C08175A	Head Base L Spring	3
05	0C08622A	Cassette Hold Spring	1
06	0C08143C	Head Base Drive Arm Spring	1
L01	0E00909A	M2x6 ⊕ Pan (Black Chromate)	3
L02	0E00117A	Washer 2x4.3x0.4	3
L03	0E00853A	BT 2x3 ⊕ Pan (Chromate)	1
J01	**CA08525A**	**P-8L Playback Head Ass'y** Serial No.: A80401001 -	**1**
01	CA08307A	Playback Head Plate	1
02	GA02034A	P-8L Playback Head	1
03	0C08169D	Pad Lifter 54	1
04	0B82195B	4P-H Connector	1
L01	0E00886A	M1.7x6.5 ⊕ Pan (Black Chromate)	2
J02	**CA08524A**	**R-8L Record Head Ass'y** Serial No.: A80401001 -	**1**
01	CA08308B	Record Head Plate	1
02	GA01050A	R-8L Record Head	1
03	0B82196B	4P-H Connector	1
L01	0E00887A	M1.7x4 ⊕ Pan (Black Chromate)	2

6. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
3. Following transistors are interchangeable with each other.
   a. 2SA733, 2SA608SP, 2SA1048, 2SA1175
   b. 2SC945, 2SC536SP, 2SC2458, 2SC2785
4. Abbreviation for part name:
   TR — Transistor, SiD — Silicon Diode, GD — Germanium Diode, ZD — Zener Diode
   RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor, RC — Cement Resistor, RW — Wire Wound Resistor
   CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor, CT — Tantalum Capacitor, CM — Film Capacitor, C — Mica Capacitor

6.1. Power Switch P.C.B. Ass'y

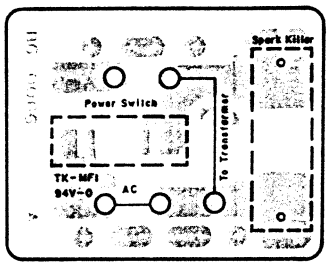


Fig. 6.1

6.2. Fuse P.C.B. Ass'y

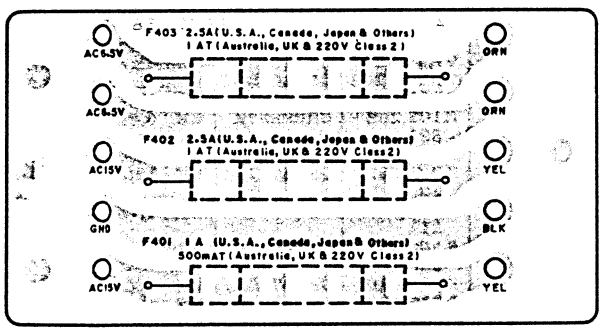

F403 2.5A(U.S.A., Canada, Japan & Others) 1 AT (Australia, UK & 220V Class 2)
AC6.5V
ORN
F402 2.5A(U.S.A., Canada, Japan & Others) 1 AT (Australia, UK & 220V Class 2)
AC15V
YEL
GND
BLK
F401 1 A (U.S.A., Canada, Japan & Others) 500mAT (Australia, UK & 220V Class 2)

Fig. 6.2

Note: Fuse P.C.B. (0B60068A) is included in DC Power Supply P.C.B. Ass'y. Fuses are included in synthesis mechanism parts list.

6.3. Lid Lamp P.C.B. Ass'y

Mounting diagram is omitted.

6.4. TS Pulse P.C.B. Ass'y

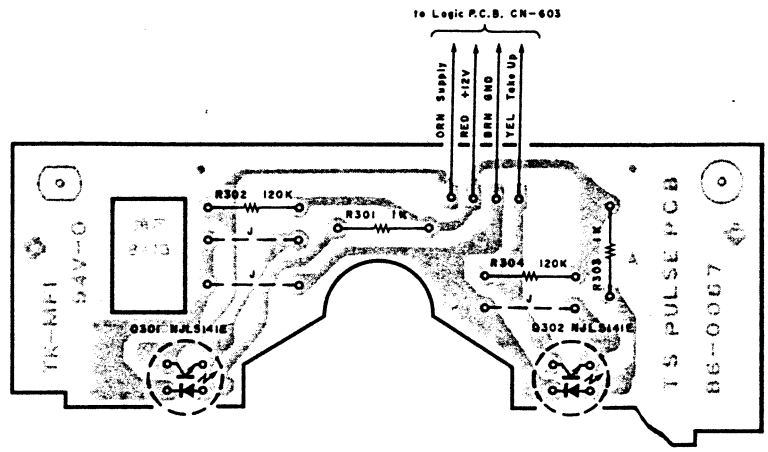


Fig. 6.3

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05188A	Power Switch P.C.B. Ass'y (RX505 (U.S.A. & Canada))		0J04789A	Power Switch Holder (1)		BA05199A	TS Pulse P.C.B. Ass'y
	BA05150A	Power Switch P.C.B. Ass'y (RX505 (Japan))		0E00612A	M3x6 ⊕ Pan (2A) (2)		0B60067A	TS Pulse P.C.B.
	BA05189A	Power Switch P.C.B. Ass'y (RX505 (Others & Australia) & RX505E)		0E00752A	Eyelet 2x3 (2)	Q301,302	0B06393A	Photo Reflector NJL 5141E
				BA05143A	Lid Lamp P.C.B. Ass'y	R301,303	0B01857A	RK 1K 1/4W J
						R302,304	0B05621A	RK 120K 1/4W J
				0B60055A	Lid Lamp P.C.B.		0B82202A	4P-H Connector (1)
			PL601	0B90010A	Lamp 12V 70 mA			
	0B60066A	Power Switch P.C.B.	CN610	0B82205A	2P-H Connector			
SW1	0B70002A	Power Switch (1)		0J04738A	Lamp Holder (1)			
	0B08342A	Spark Killer (RX505 (U.S.A. & Canada)) (1)						
	0B08363A	Spark Killer (RX505 (Japan)) (1)						
	0B08445A	Spark Killer (RX505 (Others & Australia) & RX505E) (1)						
	0B08359A	Spark Killer Cover (RX505 (Others & Australia) & RX505E) (1)						

6.5. Volume P.C.B. Ass'y

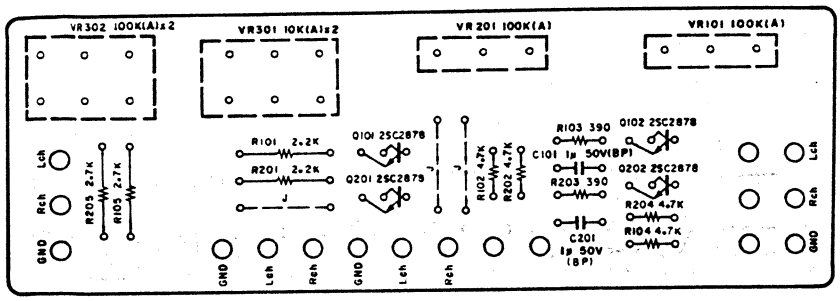


Fig. 6.4

6.6. Indicator P.C.B. Ass'y

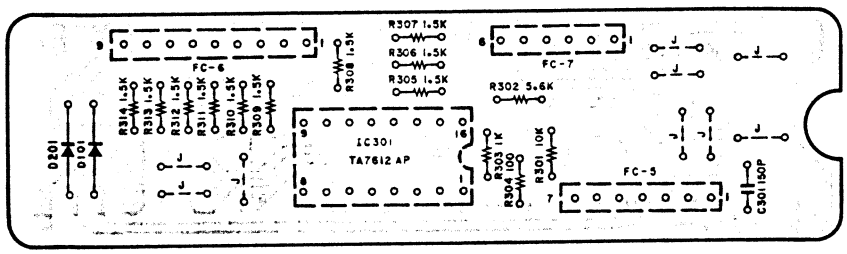


Fig. 6.5

6.7. Switch P.C.B. Ass'y

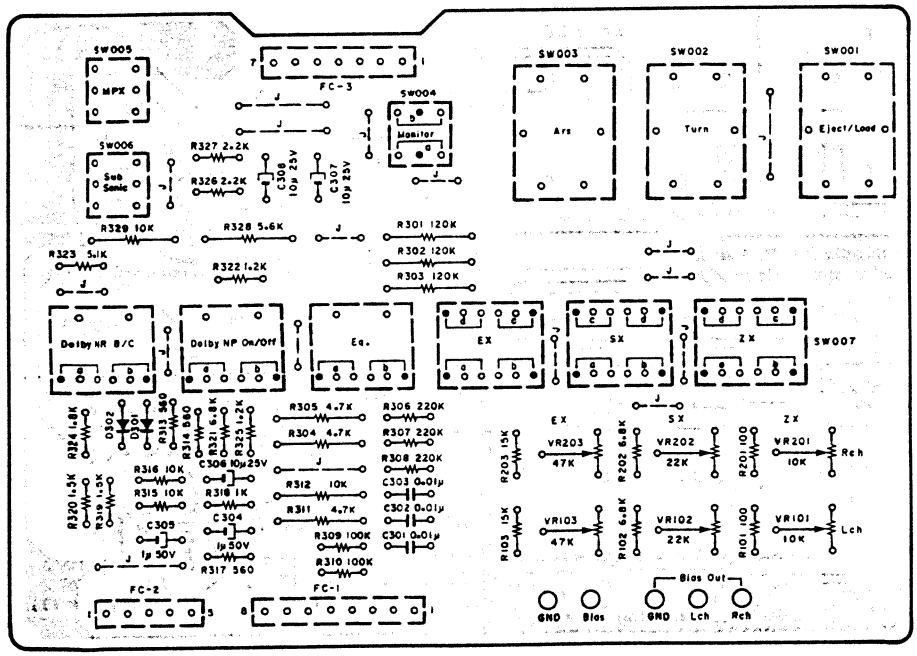


Fig. 6.6

Schematic Ref. No.	Part No.	Description
	BA05167A	**Volume P.C.B. Ass'y**
	0B60058A	Volume P.C.B.
Q101,102	0B06299A	TR 2SC2878
201,202		
VR101,201	0B30004A	VR 100K (A)
VR301	0B30003A	VR 10K (A)x2
VR302	0B07416A	VR 100K (A)x2
R101,201	0B05622A	RK 2.2K 1/4W J
R102,104	0B09693A	RK 4.7K 1/6W J
202,204		
R103,203	0B09667A	RK 390 1/6W J
R105,205	0B05664A	RK 3.9K 1/4W J
C101,201	0B09187A	CE 1μ 50V (BP)
	0J04791A	Volume Holder (1)
	0J04793A	Shield Plate (1)
	BA05142A	**Indicator P.C.B. Ass'y**
	0B60054A	Indicator P.C.B.
IC301	0B06369A	IC TA7612AP
D101,201	0B06181A	SiD 1SS53
R301	0B09701A	RK 10K 1/6W J
R302	0B09695A	RK 5.6K 1/6W J
R303	0B09677A	RK 1K 1/6W J
R304	0B09653A	RK 100 1/6W J
R305-314	0B09681A	RK 1.5K 1/6W J (10)
C301	0B09281A	CC 150P 50V K
	BA05166A	**Switch P.C.B. Ass'y**
	0B60057A	Switch P.C.B.
D301,302	0B06398A	SiD 1SS176
VR101,201	0B32008A	Semi-fixed VR 10K
VR102,202	0B32009A	Semi-fixed VR 22K
VR103,203	0B32010A	Semi-fixed VR 47K
R101,201	0B09653A	RK 100 1/6W J
R102,202	0B09697A	RK 6.8K 1/6W J
321		
R103,203	0B09705A	RK 15K 1/6W J
R301,302	0B05621A	RK 120K 1/4W J
303		
R304,305	0B01846A	RK 4.7K 1/4W J
311		
R306,307	0B09733A	RK 220K 1/6W J
308		
R309,310	0B09725A	RK 100K 1/6W J
R312,329	0B01888A	RK 10K 1/4W J
R313,314	0B09671A	RK 560 1/6W J
317		
R315,316	0B09701A	RK 10K 1/6W J
R318	0B09677A	RK 1K 1/4W J
R319,320	0B09681A	RK 1.5K 1/6W J
R322,325	0B09679A	RK 1.2K 1/6W J
R323	0B09694A	RK 5.1K 1/6W J
R324	0B09683A	RK 1.8K 1/6W J
R326,327	0B09685A	RK 2.2K 1/6W J
R328	0B01887A	RK 5.6K 1/4W J
C301,302	0B05681A	CM 0.01μ 50V J
303		
C304,305	0B01405A	CE 1μ 50V
C306,307	0B01674A	CE 10μ 25V
308		
SW001,002	0B70012A	Tact Switch
003		
SW004	0B07462A	Push Switch
SW005,006	0B70014A	Push Switch
SW007	0B70015A	Push Switch
	0B81012A	Dip Mate 5P (1)
	0B81014A	Dip Mate 7P (1)
	0B81019A	Dip Mate 8P (1)
	0J04792A	Earth Plate (1)

6.8. Control P.C.B. A Ass'y

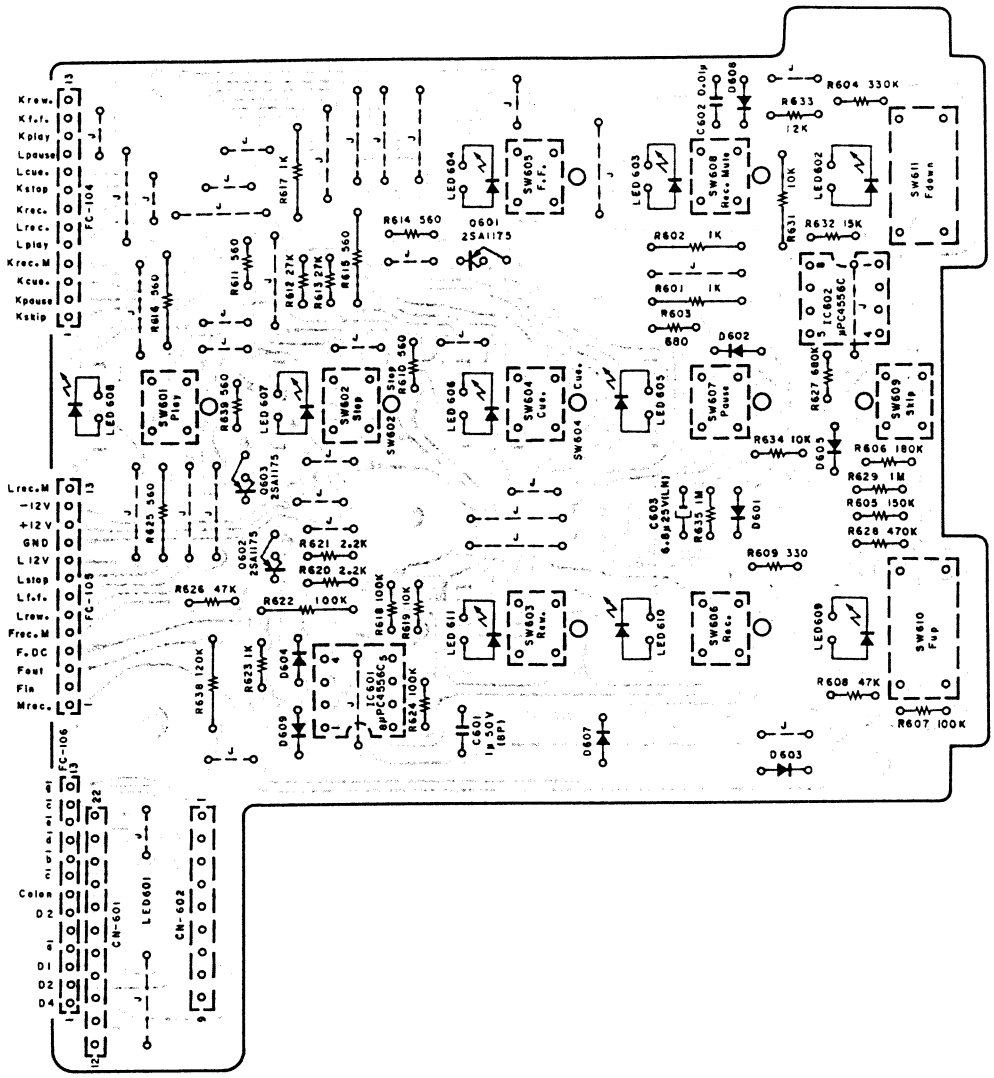


Fig. 6.7

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05175A	Control P.C.B. A Ass'y	R608,626	0B09717A	RK 47K 1/6W J
			R609	0B09665A	RK 330 1/6W J
			R610,611	0B09671A	RK 560 1/6W J
	0B60064B	Control P.C.B. A	614,639		
IC601,602	0B06216A	IC μPC4556C	R612,613	0B09711A	RK 27K 1/6W J
Q601,602	0B06455A	TR 2SA1175	R615,616	0B05575A	RK 560 1/4W J
603			625		
LED601	0B06326A	Counter LED	R619,634	0B09701A	RK 10K 1/6W J
LED602	0B06333A	LED TLR124A RED	R620,621	0B09685A	RK 2.2K 1/6W J
603,609			R622	0B01889A	RK 100K 1/4W J
610			R623	0B09677A	RK 1K 1/6W J
LED604	0B06334A	LED TLG124A GRN	R627	0B09745A	RK 680K 1/6W J
605,606			R628	0B09741A	RK 470K 1/6W J
607,608			R629,635	0B09749A	RK 1M 1/6W J
611			R631	0B01888A	RK 10K 1/4W J
D601,602	0B06398A	SiD 1SS176	R632	0B09705A	RK 15K 1/6W J
603,604			R633	0B09703A	RK 12K 1/6W J
605,607			R638	0B05621A	RK 120K 1/4W J
608,609			C601	0B09187A	CE 1μ 50V (BP)
R601,602	0B01857A	RK 1K 1/4W J	C602	0B05681A	CM 0.01μ 50V J
617			C603	0B40183A	CE 6.8μ 25V K (LN)
R603	0B09673A	RK 680 1/6W J	SW601-609	0B70004A	Touch Switch
R604	0B09737A	RK 330K 1/6W J			4.3mm
R605	0B09729A	RK 150K 1/6W J	SW610,611	0B70013A	Tact Switch
R606	0B09731A	RK 180K 1/6W J	CN601	0B81017A	IC Socket 11P
R607,618	0B09725A	RK 100K 1/6W J	CN602	0B81016A	IC Socket 9P
624				0J04797A	LED House (10)

6.9. Control P.C.B. B Ass'y

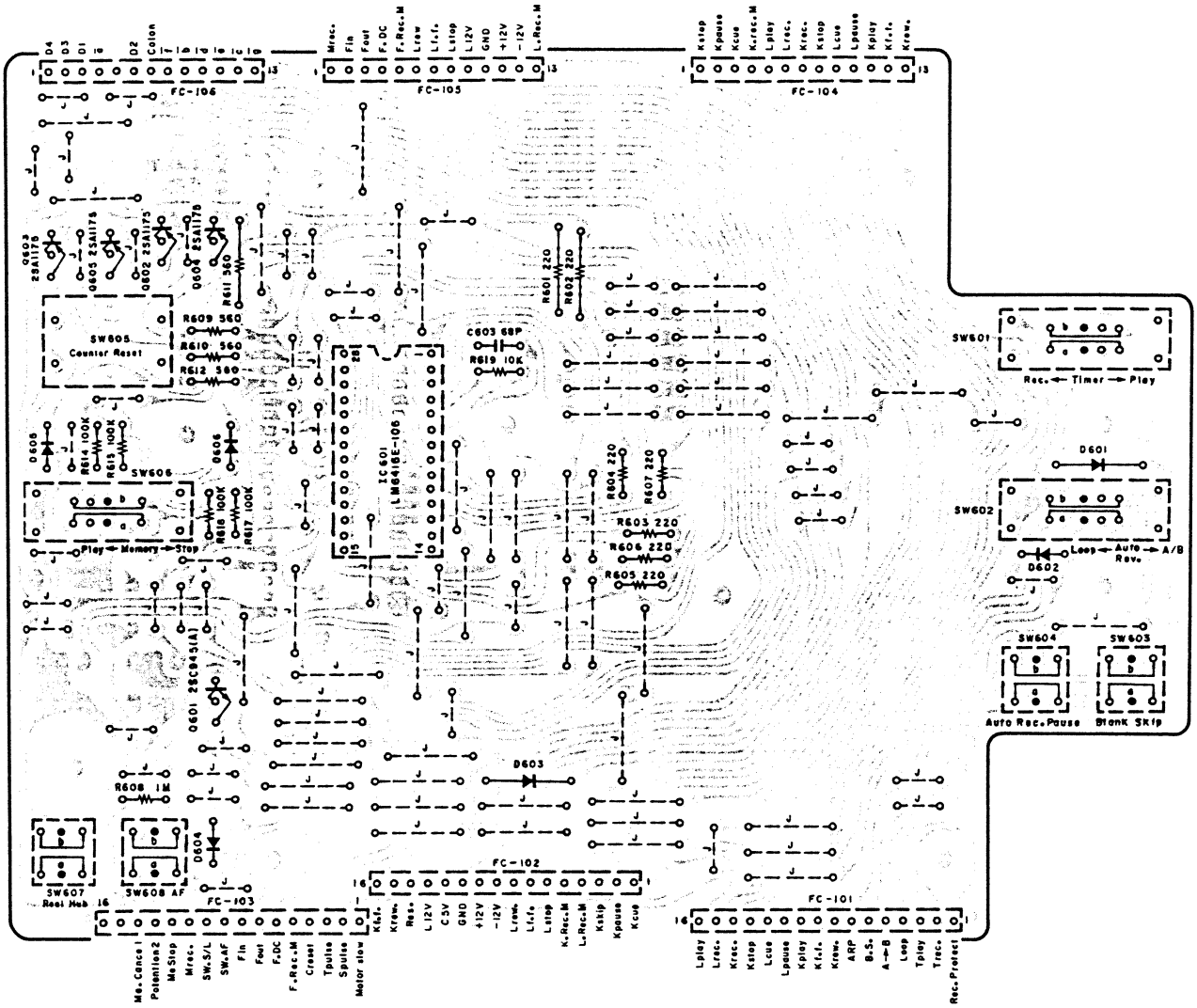


Fig. 6.8

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05187A	Control P.C.B. B Ass'y	SW601,602 606	0B07437A	Slide Switch 2-3
			SW603,604 607,608	0B70014A	Push Switch
	0B60065A	Control P.C.B. B	SW605	0B07459A	Tact Switch
IC601	0B06368A	IC LM6416E-106	FC101,102 103	0B82197A	Flat Cable 16P
Q601	0B06100A	TR 2SC945A (K,P,Q)	FC104,105 106	0B82198A	Flat Cable 13P
Q602,603 604,605	0B06455A	TR 2SA1175		0J04809A	P.C.B. Himelon (1)
D601,603	0B06181A	SiD 1SS53			
D602,604 605,606	0B06398A	SiD 1SS176			
R601,602	0B01933A	RK 220 1/4W J			
R603,604 605,606 607	0B09661A	RK 220 1/6W J			
R608	0B09749A	RK 1M 1/6W J			
R609,610 612	0B09671A	RK 560 1/6W J			
R611	0B05575A	RK 560 1/4W J			
R614,615 617,618	0B09725A	RK 100K 1/6W J			
R619	0B09701A	RK 10K 1/6W J			
C603	0B09393A	CC 68P 50V J			

6.10. DC Power Supply P.C.B. Ass'y

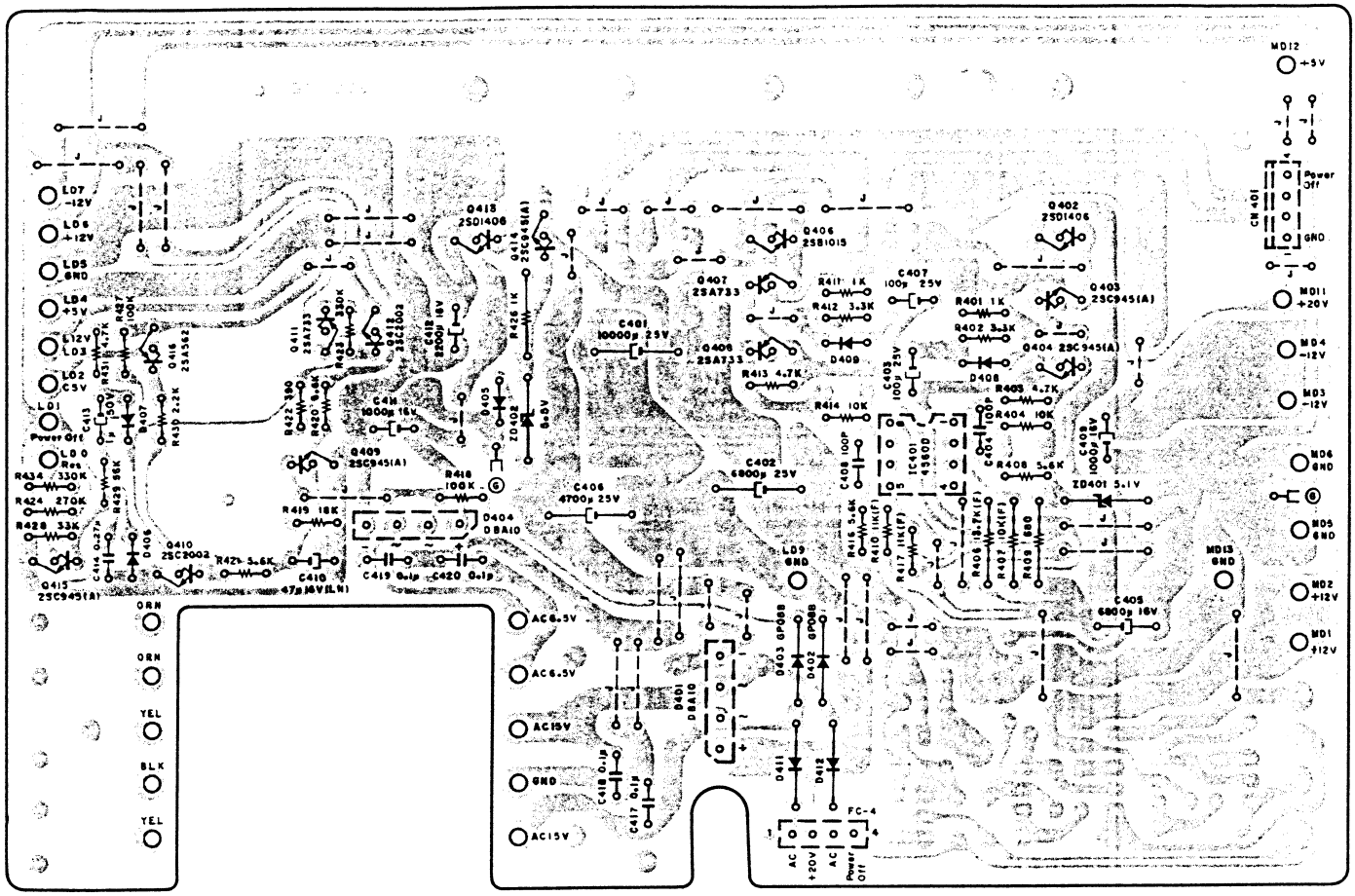


Fig. 6.9

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA05174A	DC Power Supply P.C.B. Ass'y	R409	0B05794A	RK 680 1/4W J		0E00607A	M3x8 ⊕ Pan (3A) (3)
			R410,417	0B22347A	RM 11K 1/4W F			
			R418,427	0B09725A	RK 100K 1/6W J		0E00754A	M3x8 ⊕ Pan (1)
	0B60063B	DC Power Supply P.C.B.	R419	0B09707A	RK 18K 1/6W J		0E00608A	M3x10 ⊕ Pan (3A) (Black Chromate) (3)
			R422	0B09667A	RK 390 1/6W J			
IC401	0B06217A	IC 4560D	R423,434	0B09737A	RK 330K 1/6W J			
Q402,413	0B06452A	TR 2SD1406	R424	0B09735A	RK 270K 1/6W J			
Q403,404 409,414 415	0B06100A	TR 2SC945A (K,P,Q)	R426	0B01857A	RK 1K 1/4W J			
			R428	0B09713A	RK 33K 1/6W J			
			R429	0B09719A	RK 56K 1/6W J			
Q406	0B06451A	TR 2SB1015 (Y)	R430	0B09685A	RK 2.2K 1/6W J			
Q407,408 411	0B06013A	TR 2SA733 (P,Q)	C401	0B40179A	CE 10000μ 25V			
			C402	0B09374A	CE 6800μ 25V			
Q410,412	0B06322A	TR 2SC2002 (K,L)	C403,407	0B01272A	CE 100μ 25V			
Q416	0B01426A	TR 2SA562 (O,Y)	C404,408	0B41071A	CC 100P 50V J			
ZD401	0B12002A	ZD 5.1V RD5.1JB2T	C405	0B09798A	CE 6800μ 16V			
ZD402	0B06290A	ZD 5.6V RD5.6EB2	C406	0B09799A	CE 4700μ 25V			
D401,404	0B06282A	Diode Bridge DAB10	C409,411	0B01397A	CE 1000μ 16V			
D402,403	0B06109A	SiD GP08B	C410	0B09218A	CE 47μ 16V (LN)			
D405,406 407,408 409	0B06398A	SiD 1SS176	C412	0B40180A	CE 2200μ 16V			
			C413	0B01405A	CE 1μ 50V			
			C414	0B09873A	CF 0.27μ 50V J			
D411,412	0B06181A	SiD 1SS53	C417,418 419,420	0B09292A	CC 0.1μ 50V Z			
R401,411	0B09677A	RK 1K 1/6W J						
R402,412	0B09689A	RK 3.3K 1/6W J		0B81011A	DIP Mate 4P			
R403,413 431	0B09693A	RK 4.7K 1/6W J		0B82177A	4P Flat Cable (1)			
				0B60068A	Fuse P.C.B. (1)			
R404,414	0B09701A	RK 10K 1/6W J		0B08759E	Heat Sink (1)			
R406	0B09523A	RM 13.7K 1/4W F		0B90005A	Insu-Lock (1)			
R407	0B09203A	RM 10K 1/4W F		0E00037A	Earth Lug B-5 (1)			
R408,416 420,421	0B09695A	RK 5.6K 1/6W J		0E00507A	Nut Hex. M3 (Chromate) (3)			

6.11. Dolby NR P.C.B. Ass'y

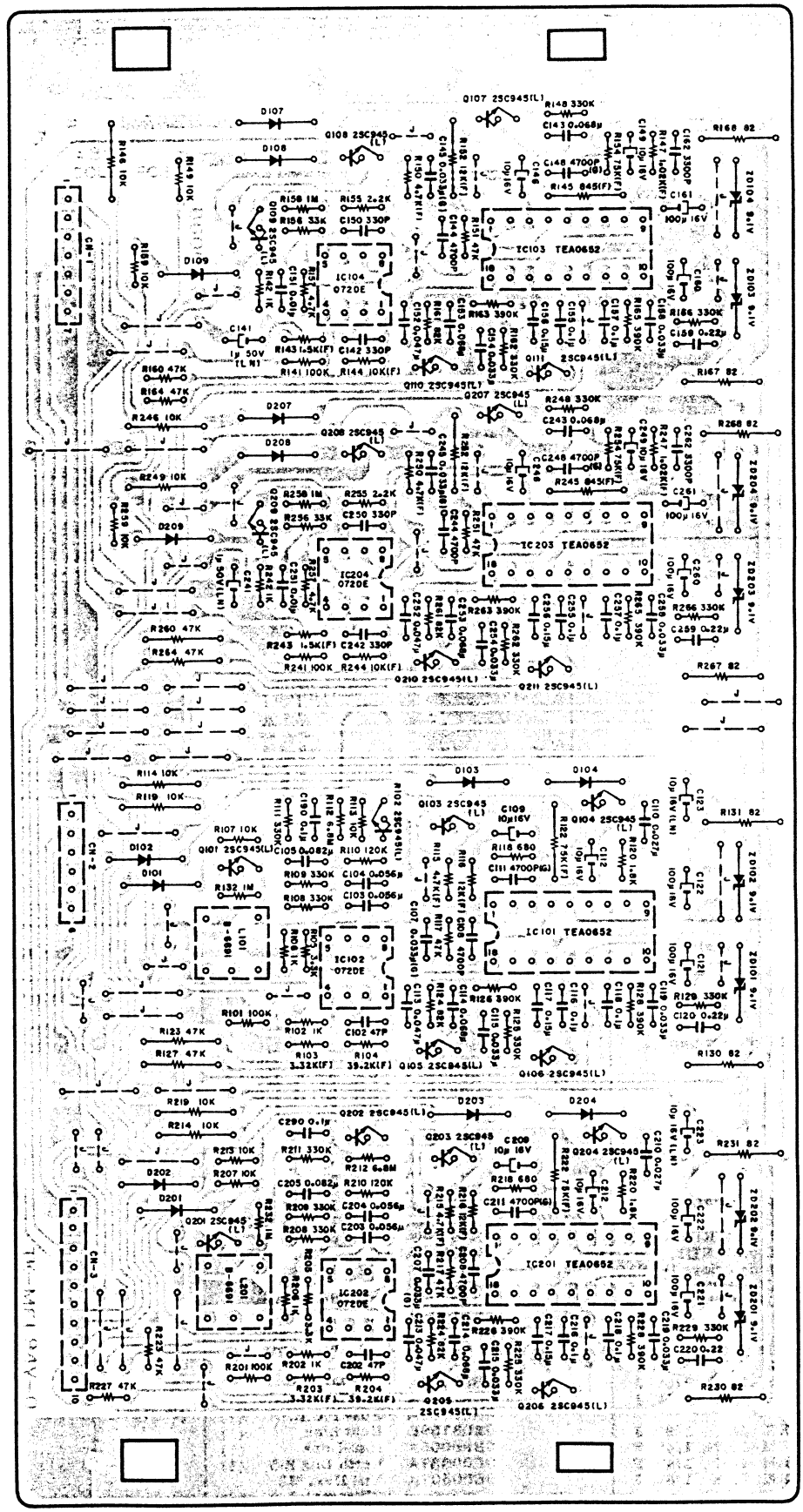


Fig. 6.10

Schematic Ref. No.	Part No.	Description
	BA05171A	Dolby NR P.C.B. Ass'y
	— Encoder —	
IC101,201	0B06382A	IC TEA0652
IC102,202	0B11005A	IC NJM072DE
Q101-106 201-206	0B01872A	TR 2SC945L (P,Q)
ZD101,102 201,202	0B06232A	ZD 9.1V RD9.1EB2
D101-104 201-204	0B06181A	SiD 1SS53
L101,201	0B06691A	L-C Block YEL
R101,201	0B09725A	RK 100K 1/6W J
R102,106 202,206	0B09677A	RK 1K 1/6W J
R103,203	0B22287A	RM 3.32K 1/6W F
R104,204	0B22410A	RM 39.2K 1/6W F
R105,205	0B09689A	RK 3.3K 1/6W J
R107,113 207,213	0B09701A	RK 10K 1/6W J
R108,109 111,125 129,208 209,211 225,229	0B09737A	RK 330K 1/6W J
R110,210	0B09727A	RK 120K 1/6W J
R112,212	0B09347A	RM 6.8M 1/6W J
R114,119 214,219	0B01888A	RK 10K 1/4W J
R115,215	0B22305A	RM 4.7K 1/4W F
R116,216	0B22351A	RM 12K 1/4W F
R117,217 223,227	0B09717A	RK 47K 1/6W J
R118,218	0B09673A	RK 680 1/6W J
R120,220	0B09683A	RK 1.8K 1/6W J
R122,222	0B09562A	RM 75K 1/4W F
R123,127	0B05641A	RK 47K 1/4W J
R124,224	0B09723A	RK 82K 1/6W J
R126,128 226,228	0B09739A	RK 390K 1/6W J
R130,131 230,231	0B09162A	RF 82 1/4W J
R132,232	0B09749A	RK 1M 1/6W J
C102,202	0B09242A	C 47P 50V J
C103,104 203,204	0B09865A	CF 0.056μ 50V J
C105,205	0B09867A	CF 0.082μ 50V J
C107,207	0B09240A	CP 0.033μ 100V G
C108,208	0B05652A	CM 4700P 50V J
C109,112 209,212	0B01412A	CE 10μ 16V
C110,210	0B09045A	CM 0.027μ 50V J
C111,211	0B09191A	CP 4700P 100V G
C113,213	0B09864A	CF 0.047μ 50V J
C114,214	0B09866A	CF 0.068μ 50V J
C115,119 215,219	0B09862A	CF 0.033μ 50V J
C116,118 190,216 218,290	0B09868A	CF 0.1μ 50V J
C117,217	0B09870A	CF 0.15μ 50V J
C120,220	0B09872A	CF 0.22μ 50V J
C121,122 221,222	0B01400A	CE 100μ 16V
C123,223	0B09816A	CE 10μ 16V (LN)
	— Decoder —	
IC103,203	0B06382A	IC TEA0652
IC104,204	0B11005A	IC NJM072DE
Q107-111 207-211	0B01872A	TR 2SC945L (P,Q) (10)
ZD103,104 203,204	0B06232A	ZD 9.1V RD9.1EB2
D107,108 109,207 208,209	0B06181A	SiD 1SS53
R141,241	0B09725A	RK 100K 1/6W J
R142,242	0B09677A	RK 1K 1/6W J
R143,243	0B22247A	RM 1.5K 1/4W F
R144,244	0B09929A	RM 10K 1/4W F
R145,245	0B22549A	RM 845 1/4W F
R146,246 249	0B01888A	RK 10K 1/4W J
R147,247	0B22230A	RM 1.02K 1/4W F
R148,162 166,248 262,266	0B09737A	RK 330K 1/6W J
R149,159 259	0B09701A	RK 10K 1/6W J
R150,250	0B22305A	RM 4.7K 1/4W F
R151,160 164,251	0B09717A	RK 47K 1/6W J
R152,252	0B22570A	RM 12K 1/4W F
R154,254	0B22443A	RM 75K 1/4W F
R155,255	0B09685A	RK 2.2K 1/6W J
R156,256	0B09713A	RK 33K 1/6W J
R157,257	0B09693A	RK 4.7K 1/6W J
R158,258	0B09749A	RK 1M 1/6W J
R161,261	0B09723A	RK 82K 1/6W J
R163,165 263,265	0B09739A	RK 390K 1/6W J
R167,168 267,268	0B09162A	RF 82 1/4W J
R260,264	0B05641A	RK 47K 1/4W J
C141,241	0B09814A	CE 1μ 50V (LN)
C142,150 242,250	0B09322A	CP 330P 100V J
C143,153 243,253	0B09866A	CF 0.068μ 50V J
C144,244	0B05652A	CM 4700P 50V J
C145,245	0B09240A	CP 0.033μ 100V G
C146,149 246,249	0B01412A	CE 10μ 16V
C148,248	0B09191A	CP 4700P 100V G
C151,251	0B05681A	CM 0.01μ 50V J
C152,252	0B09864A	CF 0.047μ 50V J
C154,158 254,258	0B09862A	CF 0.033μ 50V J
C155,157 255,257	0B09868A	CF 0.1μ 50V J
C156,256	0B09870A	CF 0.15μ 50V J
C159,259	0B09872A	CF 0.22μ 50V J
C160,161 260,261	0B01400A	CE 100μ 16V
C162,262	0B01914A	CM 3300P 50V J
	— Miscellaneous —	
	0B60061B	Dolby NR P.C.B.
CN1	0B81106A	7P-S Post
CN2	0B81105A	6P-S Post
CN3	0B81109A	10P-S Post
	0J04795A	P.C.B. Holder (2)

Schematic Ref. No.	Part No.	Description
	BA05173A	Logic P.C.B. Ass'y
	0B60062B	Logic P.C.B.
IC601	0B11019A	IC LM6402G-261
IC602	0B11025A	IC LM6402G-282
IC603	0B11040A	IC LM6417E-338
IC604,607	0B06124B	IC NJM4558D
IC605	0B06317A	IC μPD4030BC
IC606	0B06143A	IC μPD4001BC
Q602,603 610,614 615,616 617,618 620,621 626,627 629,630 633,634	0B06100A	TR 2SC945A (K,P,Q)
Q604,605 606,607 619,622 631	0B06013A	TR 2SA733 (P,Q)
Q608,611 624	0B06316A	TR 2SD882 (P,Q)
Q609,612 625	0B06303A	TR 2SB772 (P,Q)
Q613,632	0B06202A	TR 2SA562TM (Y)
Q623	0B06129A	FET 2SK117
WD601	0B12100A	Double SiD MC921
D602-606 608 611-613 616-620 623-631	0B06398A	SiD 1SS176 (23)
D607,609 610,614 615,621 622	0B06181A	SiD 1SS53
X601	0B08908A	Xtal 400 kHz
X602	0B90009A	Xtal 4.1943 MHz
T601	0B51047A	Bias Osc. Block
VR601	0B07257A	Semi-fixed VR 100K
VR602,607	0B07329A	Semi-fixed VR 2K
VR603,606	0B07256A	Semi-fixed VR 10K
VR604	0B07405A	Semi-fixed VR 200K
VR605	0B07269A	Semi-fixed VR 50K
R605,626 668	0B09717A	RK 47K 1/6W J
R607,608 609,610 611,612 613,627 628,640 641,686 689,692 910,966	0B09737A	RK 330K 1/6W J
R614,615 629,697 698,901 902,931 942,944	0B09749A	RK 1M 1/6W J
R616,621	0B05776A	RK 1M 1/4W J
R617,619 622,635 653,679 909,914 918,920 959	0B09701A	RK 10K 1/6W J
R618,620 637,638 639,658 687,695 903,904 905,906 913,915 916,922 923,941 943,953 965	0B09725A	RK 100K 1/6W J
R623,677 940	0B01888A	RK 10K 1/4W J
R624,625 907	0B05627A	RK 330K 1/4W J
R630,934 935	0B09711A	RK 27K 1/6W J
R631,632	0B05743A	RK 27K 1/4W J
R633	0B09712A	RK 30K 1/6W J
R634,958 968	0B09707A	RK 18K 1/6W J
R636,646 678,957	0B09689A	RK 3.3K 1/6W J
R642	0B22420A	RM 47.5K 1/6W F
R643	0B22515A	RM 332K 1/6W F
R644	0B01887A	RK 5.6K 1/4W J
R645,661	0B09699A	RK 8.2K 1/6W J
R647,669	0B09703A	RK 12K 1/6W J
R648,670	0B09723A	RK 82K 1/6W J
R649	0B22444A	RM 76.8K 1/6W F
R650	0B05509A	RK 33K 1/4W J
R651,652 665,688 696,699	0B09713A	RK 33K 1/6W J
R654,967	0B09731A	RK 180K 1/6W J
R655	0B05615A	RK 22K 1/4W J
R656,657	0B09927A	RM 100K 1/6W F
R659,663 684,933	0B05671A	RK 2.2M 1/4W J
R660	0B09214A	RF 1 1/4W J
R662,932 952	0B09733A	RK 220K 1/6W J
R664,936	0B09727A	RK 120K 1/6W J
R666	0B09716A	RK 43K 1/6W J
R667,675 926,928 939	0B09685A	RK 2.2K 1/6W J
R671,921	0B01889A	RK 100K 1/4W J
R672	0B09697A	RK 6.8K 1/6W J
R673,951	0B09693A	RK 4.7K 1/6W J
R674	0B09661A	RK 220 1/6W J
R676,963	0B09321A	RF 4.7 1/4W J
R680	0B09741A	RK 470K 1/6W J
R681	0B22493A	RM 220K 1/6W F
R682	0B09300A	RM 150K 1/4W F
R683	0B09315A	RM 332K 1/4W F
R685,911 927,929	0B09709A	RK 22K 1/6W J
R690,693	0B09745A	RK 680K 1/6W J
R691,694 937,938	0B09747A	RK 820K 1/6W J
R908,954	0B09695A	RK 5.6K 1/6W J
R912	0B09719A	RK 56K 1/6W J
R917	0B09749A	RK 1M 1/6W J
R930	0B09726A	RK 110K 1/6W J
R945	0B22506A	RM 280K 1/6W F
R946,947	0B22531A	RM 453K 1/6W F
R948	0B22470A	RM 133K 1/6W F
R955	0B09677A	RK 1K 1/6W J
R956	0B09671A	RK 560 1/6W J
R960	0B09831A	RF 22 1W J
R961	0B09936A	RF 10 1/2W J
R962	0B01857A	RK 1K 1/4W J
R964	0B09705A	RK 15K 1/6W J
C601,603 621,622	0B01412A	CE 10μ 16V
C605	0B05557A	CM 0.015μ 50V J
C606,607 617	0B05652A	CM 4700P 50V J
C608,609	0B09283A	CC 220P 50V K
C610,611	0B01402A	CE 4.7μ 25V
C612	0B01502A	CE 330μ 16V
C613,623	0B09277A	CC 10P 50V J
C614,615	0B01405A	CE 1μ 50V
C616	0B09372A	CE 2.2μ 50V
C618	0B01863A	CE 3.3μ 50V
C619	0B09279A	CC 22P 50V K
C620	0B41187A	CC 39P 50V J
C624	0B09538A	CP 0.018μ 100V G
C625	0B01400A	CE 100μ 16V
C626	0B09187A	CE 1μ 50V (BP)
C627	0B09147A	CE 3.3μ 50V (LN)
C628	0B09292A	CC 0.1μ 50V Z
CN601	0B08653A	3P-T Post
CN602	0B08642A	6P-T Post
CN603	0B08654A	4P-T Post
CN604	0B81023A	2P-T Post
CN605,607	0B08656A	2P-T Post
CN606	0B08724A	5P-T Post
CN608	0B02356A	JP Connector 12P
CN609	0B08644A	8P-T Post
CN610	0B02280A	2P-T Post
	0B81086A	Wire Mate 3P (6)
	0B08964A	TR Mica TO-126 (2)

Schematic Ref. No.	Part No.	Description
	0E00507A	Nut Hex. M3 (Chromate) (2)
	0E00521A	M3x8 ⊕Pan (Black Chromate) (2)
	0J04485A	Heat Sink B (1)

6.12. Logic P.C.B. Ass'y

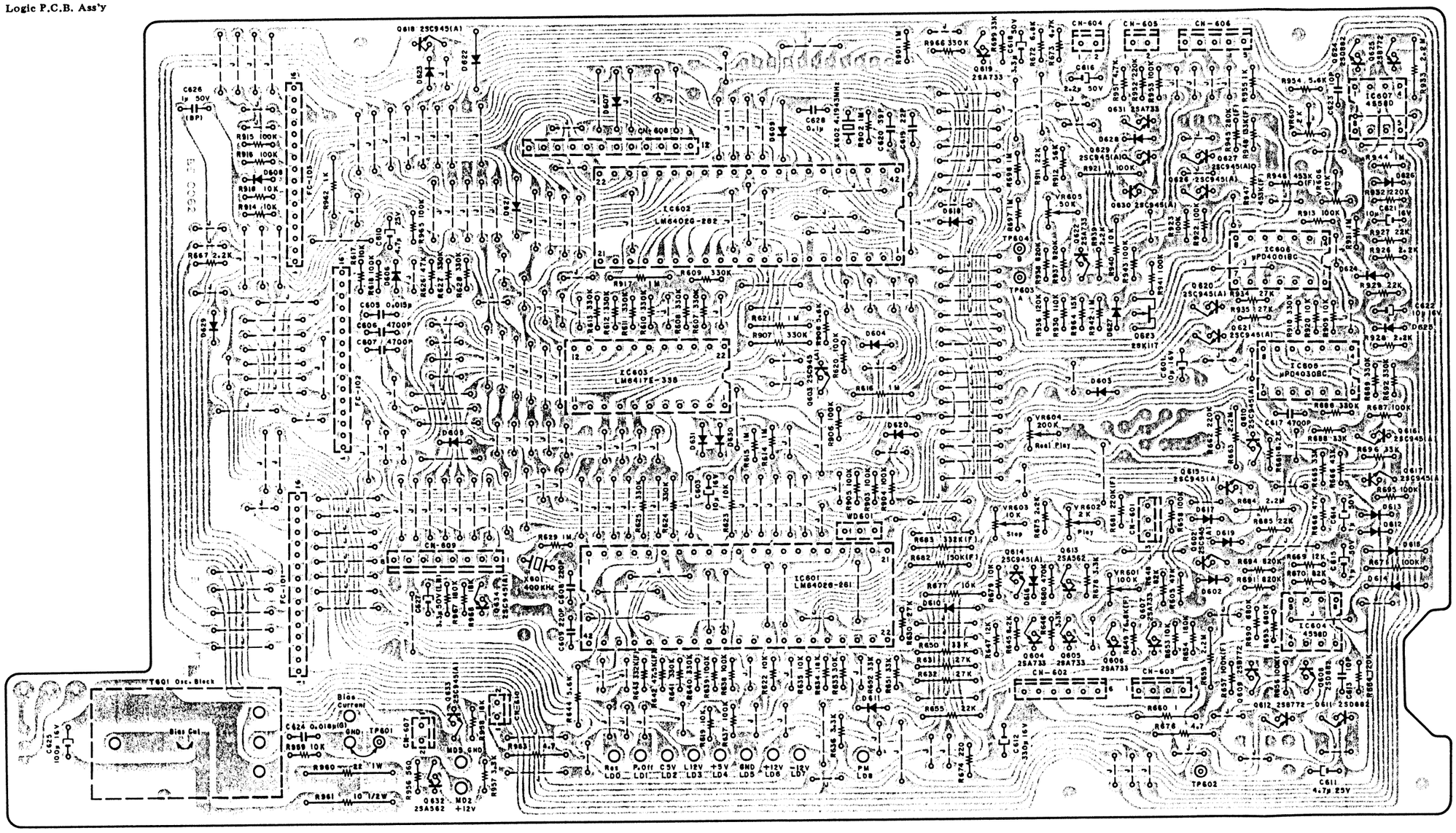


Fig. 6.11

6.13. Main P.C.B. Ass'y

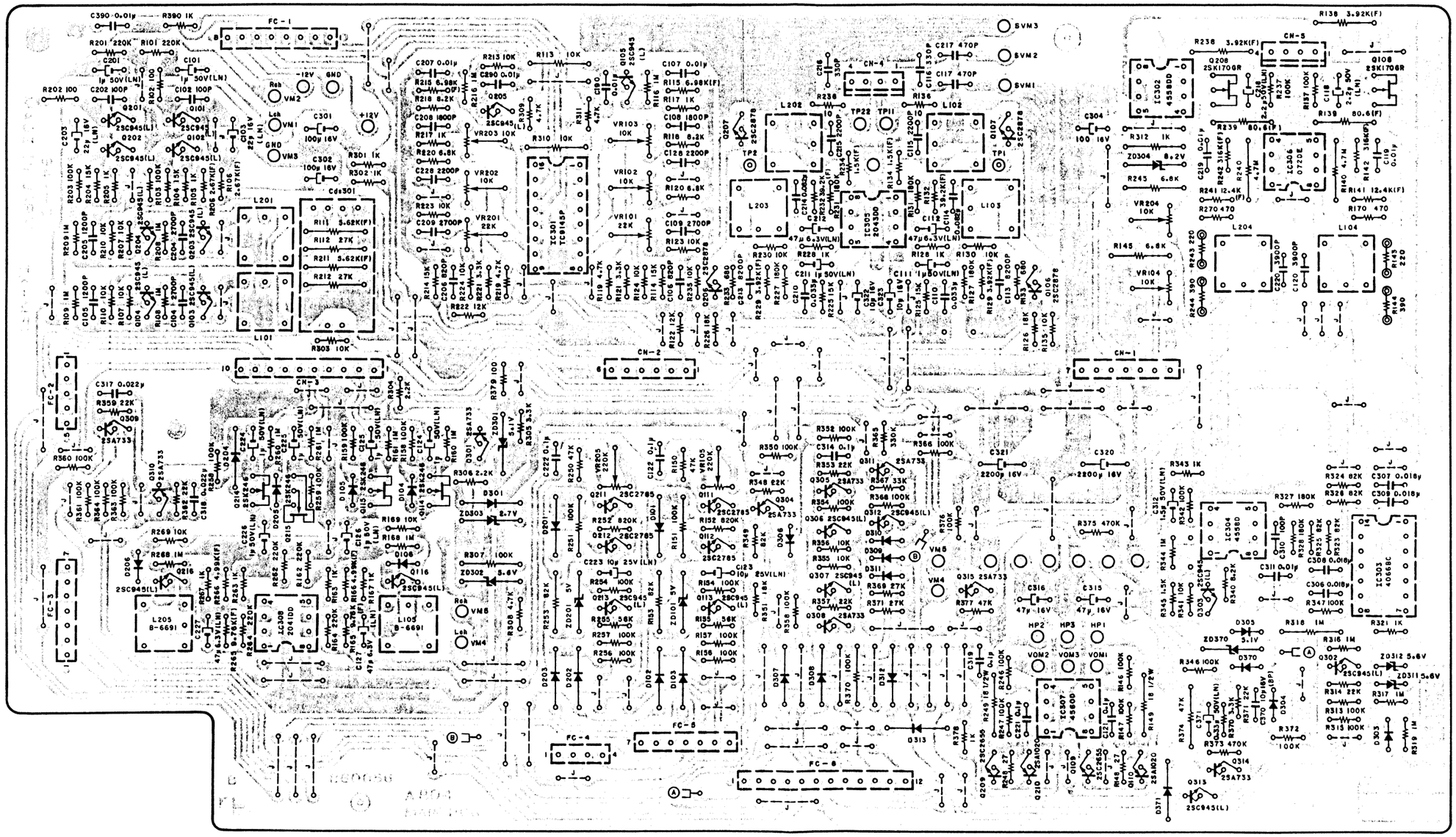


Fig. 6.12

Schematic Ref. No.	Part No.	Description
	BA05165A	Main P.C.B. Ass'y
	— Line Input —	
Q101-104 201-204	0B01872A	TR 2SC945L (P,Q)
Q301	0B06013A	TR 2SA733 (P,Q)
ZD301	0B06230A	ZD 5.1V RD5.1EB2
ZD302	0B06290A	ZD 5.6V RD5.6EB2
D301	0B06181A	SiD 1SS53
L101,201	0B06690A	L-C Block BLUE
R101,201	0B09733A	RK 220K 1/6W J
R102,202 379	0B09653A	RK 100 1/6W J
R103,203	0B09725A	RK 100K 1/6W J
R104,204	0B09705A	RK 15K 1/6W J
R105,205 301,302 390	0B09677A	RK 1K 1/6W J
R106,206	0B22275A	RM 2.67K 1/6W F
R107,110 207,210 303	0B09701A	RK 10K 1/6W J
R108,109 208,209	0B09749A	RK 1M 1/6W J
R111,211	0B09427A	RM 5.62K 1/4W F
R112,212	0B05743A	RK 27K 1/4W J
R304,306	0B09685A	RK 2.2K 1/6W J
R305	0B09689A	RK 3.3K 1/6W J
R307	0B01889A	RK 100K 1/4W J
R308	0B09693A	RK 4.7K 1/6W J
C101,201	0B09814A	CE 1μ 50V (LN)
C102,202	0B09282A	CC 100P 50V K
C103,203	0B09932A	CE 22μ 16V (LN)
C104,204	0B09189A	CM 2700P 50V J
C105,205	0B05687A	CM 1200P 50V J
C301,302	0B01400A	CE 100μ 16V
C390	0B09290A	C 0.01μ 50V J
C391	0B09868A	CF 0.1μ 50V J
Cds301	0B06325B	Photocoupler MCD7214F
	— Line Amp. —	
IC308	0B11004A	IC NJM2041DD
Q114,115 214,215	0B10022A	FET 2SK246
Q116,216	0B01872A	TR 2SC945L (P,Q)
Q309,310	0B06013A	TR 2SA733 (P,Q)
D104,105 106,205 206	0B06398A	SiD 1SS176
D204	0B06181A	SiD 1SS53
L105,205	0B06691A	L-C Block YEL
R158,159 258,259 360,361 363,364	0B09725A	RK 100K 1/6W J
R160,161 168,260 261,268	0B09749A	RK 1M 1/6W J
R162,164 262,264	0B09733A	RK 220K 1/6W J
R163,167 263,267	0B09677A	RK 1K 1/6W J
R165,265	0B22342A	RM 9.76K 1/6W F
R166,266	0B22308A	RM 4.99K 1/6W F
R169,269	0B09701A	RK 10K 1/6W J
R359,362	0B09709A	RK 22K 1/6W J
C124,125 126,224 225,226	0B09814A	CE 1μ 50V (LN)
C127,227	0B09815A	CE 47μ 6.3V (LN)
C317,318	0B05582A	CM 0.022μ 50V J
	— Rec. Cal. —	
IC301	0B11027A	IC TC9145P
Q105,205	0B01872A	TR 2SC945L (P,Q)
VR101,201	0B32009A	Semi-fixed VR 22K
VR102,103 202,203	0B32008A	Semi-fixed VR 10K
R113,310	0B01888A	RK 10K 1/4W J
R114,214	0B09705A	RK 15K 1/6W J
R115,215	0B22326A	RM 6.98K 1/4W F
R116,216	0B09749A	RK 1M 1/6W J
R117,217	0B09677A	RK 1K 1/6W J
R118,218	0B09699A	RK 8.2K 1/6W J
R119,219 309,311	0B09693A	RK 4.7K 1/6W J

Schematic Ref. No.	Part No.	Description
R120,220	0B09697A	RK 6.8K 1/6W J
R121,221	0B09689A	RK 3.3K 1/6W J
R122,222	0B09703A	RK 12K 1/6W J
R123,124 213,223 224	0B09701A	RK 10K 1/6W J
C106,206	0B09783A	CP 820P 100V J
C107,207	0B05681A	CM 0.01μ 50V J
C108,208	0B01913A	CM 1800P 50V J
C109,209	0B09189A	CM 2700P 50V J
C128,228	0B01802A	CM 2200P 50V J
C190,290	0B09290A	CM 0.01μ 50V J
	— Rec. Eq. Amp. —	
IC305	0B06387A	IC 2043DD
Q106,107 206,207	0B06299A	TR 2SC2878
L102,202	0B06705A	Trap Coil 1.05 mH
L103,203	0B51045A	L-C Block
R125,225	0B09705A	RK 15K 1/6W J
R126,226	0B09707A	RK 18K 1/6W J
R127,131 227,231	0B09731A	RK 180K 1/6W J
R128,228	0B09677A	RK 1K 1/6W J
R129,229	0B22296A	RM 3.92K 1/6W F
R130,135 230,235	0B09701A	RK 10K 1/6W J
R132,232	0B22410A	RM 39.2K 1/4W F
R133,233	0B09673A	RK 680 1/6W J
R134,234	0B22247A	RM 1.5K 1/6W F
R136,236	0B09629A	RK 10 1/6W J
C110,210	0B09862A	CF 0.033μ 50V J
C111,211	0B09814A	CE 1μ 50V (LN)
C112,212	0B09815A	CE 47μ 6.3V (LN)
C113,213	0B05814A	CM 8200P 50V J
C114,214	0B09867A	CF 0.082μ 50V J
C115,215	0B09834A	CP 2200P 100V J
C116,216	0B09322A	CP 330P 100V J
C117,217	0B09286A	CC 470P 50V K
C322,323	0B01412A	CE 10μ 16V
CN4	0B02281A	4P-T Post
	— PB Eq. Amp. —	
IC302	0B06146A	IC 4558DD
IC306	0B11005A	IC NJM072DE
Q108,208	0B06376A	FET 2SK170 (GR)
ZD304	0B06418A	ZD 8.2V RD8.2JB2
L104,204	0B06717A	Trap Unit
VR104,204	0B32008A	Semi-fixed VR 10K
R137,237	0B09725A	RK 100K 1/6W J
R138,238	0B09768A	RM 3.92K 1/4W F
R139,239	0B22553A	RM 80.6 1/4W F
R140,240	0B22548A	RM 4.7M 1/4W J
R141,241	0B22353A	RM 12.4K 1/6W F
R142,242	0B22512A	RM 316K 1/6W F
R143,243	0B09661A	RK 220 1/6W J
R144,244	0B09667A	RK 390 1/6W J
R145,245	0B01682A	RK 6.8K 1/4W J
R170,270	0B09669A	RK 470 1/6W J
R312	0B01857A	RK 1K 1/4W J
C118,218	0B09933A	CE 2.2μ 50V (LN)
C119,219	0B09591A	CP 0.01μ 100V J
C120,220	0B01804A	CM 3900P 50V J
C304	0B01400A	CE 100μ 16V
CN5	0B08654A	4P-T Post
	— Meter Amp. —	
Q111,112 211,212	0B06456A	TR 2SC2785
Q113,213	0B01872A	TR 2SC945L (P,Q)
ZD101,201	0B12101A	ZD 5V 5C-1
D101,102 103,201 202,203	0B06181A	SiD 1SS53
VR105,205	0B32026A	Semi-fixed VR 220K
R150,250	0B09717A	RK 47K 1/6W J
R151,251	0B01889A	RK 100K 1/4W J
R152,252	0B09743A	RK 820K 1/6W J
R153,253	0B05668A	RK 82K 1/4W J
R154,156 157,254 256,257	0B09725A	RK 100K 1/6W J
R155,255	0B09719A	RK 56K 1/6W J
C122,222	0B09868A	CF 0.1μ 50V J
C123,223	0B09148A	CE 10μ 25V (LN)

Schematic Ref. No.	Part No.	Description
	— Logic Interface —	
Q304,305 308,311 314,315	0B06013A	TR 2SA733 (P,Q)
Q306,307 312,313	0B01872A	TR 2SC945L (P,Q)
D306,309 310,311	0B06398A	SiD 1SS176
D307,308 312,313	0B06181A	SiD 1SS53
R348,353 357	0B09709A	RK 22K 1/6W J
R349	0B09723A	RK 82K 1/6W J
R350,352 354,358 366,368 376	0B09725A	RK 100K 1/6W J
R351	0B09707A	RK 18K 1/6W J
R355,356	0B09701A	RK 10K 1/6W J
R365	0B09737A	RK 330K 1/6W J
R367	0B09713A	RK 33K 1/6W J
R369,371	0B09711A	RK 27K 1/6W J
R370	0B01889A	RK 100K 1/4W J
R373,375	0B09741A	RK 470K 1/6W J
R374	0B05641A	RK 47K 1/4W J
R377	0B09717A	RK 47K 1/6W J
R378	0B09677A	RK 1K 1/6W J
C314,319	0B09868A	CF 0.1μ 50V J
C320,321	0B01406A	CE 2200μ 16V
	— Headphone Amp. —	
IC307	0B06217A	IC NJM4560D
Q109,209	0B06429A	TR 2SC2655 (Y)
Q110,210	0B10015A	TR 2SA1020 (O,Y)
R146,147 246,247	0B09725A	RK 100K 1/6W J
R148,248	0B09639A	RK 27 1/6W J
R149,249	0B09536A	RF 18 1/2W J
C121,221	0B09868A	CF 0.1μ 50V J
C315,316	0B01409A	CE 47μ 25V
	— Music Sensor —	
IC303	0B06144A	IC μPD4066BC
IC304	0B06124B	IC NJM4558D
Q302,303	0B01872A	TR 2SC945L (P,Q)
ZD304	0B12119A	ZD 4.7V RD4.7EB1
ZD311,312	0B12003A	ZD 5.6V RD5.6JB2T
ZD370	0B06230A	ZD 5.1V RD5.1EB2
D303,370 371	0B06398A	SiD 1SS176
D304,305	0B06181A	SiD 1SS53
R313,315 342,346 347,372	0B09725A	RK 100K 1/6W J
R314,371	0B09709A	RK 22K 1/6W J
R316,317 319,344	0B09749A	RK 1M 1/6W J
R318	0B05776A	RK 1M 1/4W J
R321,343	0B09677A	RK 1K 1/6W J
R323,324 325,326	0B09723A	RK 82K 1/6W J
R327,328	0B09731A	RK 180K 1/6W J
R340	0B09699A	RK 8.2K 1/6W J
R341	0B09701A	RK 10K 1/6W J
R345	0B09681A	RK 1.5K 1/6W J
R370	0B09689A	RK 3.3K 1/6W J
C306,307 308,309	0B05832A	CM 0.018μ 50V J
C310	0B09282A	CC 100P 50V K
C311	0B05681A	CM 0.01μ 50V J
C312	0B09221A	CE 1.5μ 50V (LN)
C370	0B40184A	CE 10μ 16V (BP)
C371	0B09327A	CE 0.33μ 50V (LN)
	— Miscellaneous —	
	0B60056B	Main P.C.B.
CN1	0B81111A	7P-T Post
CN2	0B81110A	6P-T Post
CN3	0B81114A	10P-T Post
	0B81087A	Wire Mate 4P (1)
	0B81088A	Wire Mate 5P (1)
	0B81090A	Wire Mate 7P (2)
	0B81091A	Wire Mate 8P (1)

7. SCHEMATIC DIAGRAMS

7.1. Attention to Servicemen

(1) Caution

(a) If a part is in need of removing (or replacing) for service, it should be remounted (or replaced with specified parts) by the same methods as before after servicing.

(b) The appliance should be used only specified parts for preventing a risk of fire and electric shock and maintaining the characteristics.

(c) Before returning the repaired appliance to a customer, check to insure that the exposed part is accurately insulated from the Power Supply by measuring the leakage current or the insulation resistance between them.

(2) Parts Replacement

Following parts shall be replaced with the specified ones. Refer to the Parts List.

(a) Power Supply Circuit
Power Cord
Power Transformer: T1

(b) Power Switch P.C.B. Ass'y
Power Switch: SW1
Spark Killer: M2

(c) Fuse P.C.B. Ass'y
Fuses: F401, 402, 403

(d) DC Power Supply P.C.B. Ass'y
Transistors: Q402, 406, 413, 416
Diode Bridges: D401, 404

(e) Logic P.C.B. Ass'y
Transistors: Q608, 609, 611, 612, 624, 625
Fail Safe Type Resistors: R660, 676, 960, 961, 963

(f) Main P.C.B. Ass'y
Fail Safe Type Resistors: R149, 249

(g) Dolby NR P.C.B. Ass'y
Fail Safe Type Resistors: R130, 131, 167, 168, 230, 231, 267, 268

7.2. IC Block Diagrams

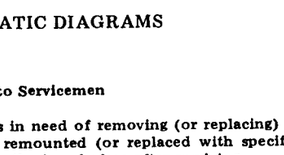


Fig.7.2.1 Operational Amp. IC 4558D, 4558DD, 4556C, 4560D, 2041DD, 2043DD, 072DE

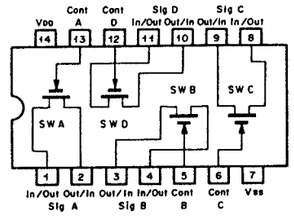


Fig. 7.2.2 Bilateral Switch C-MOS IC μPD4066BC

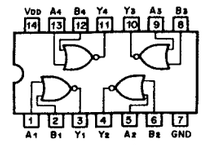


Fig. 7.2.3 NOR Gate C-MOS IC μPD4001BC

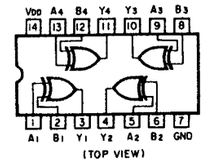


Fig. 7.2.4 Exclusive OR Gate C-MOS IC μPD4030BC

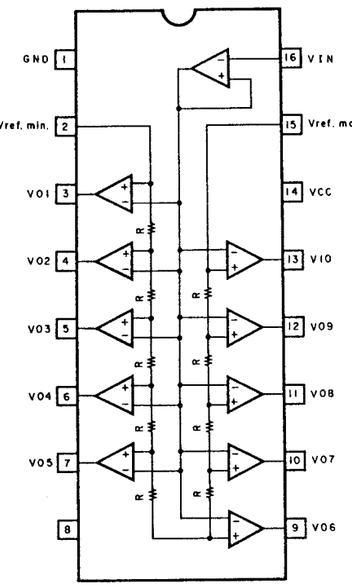


Fig. 7.2.5 Level Meter Driver TA7612AP

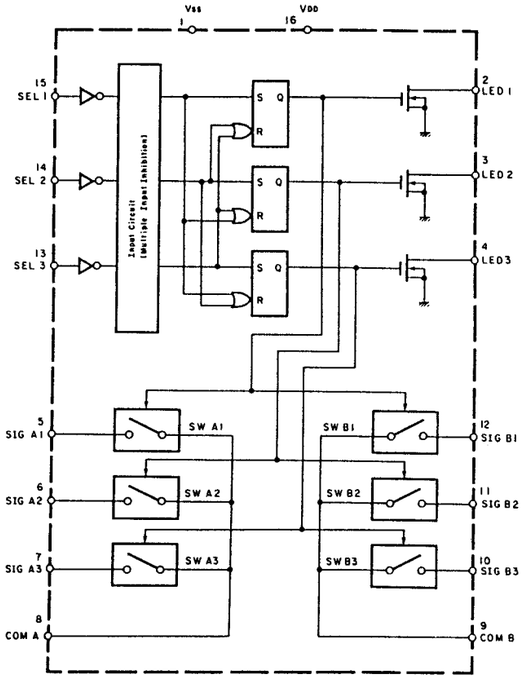
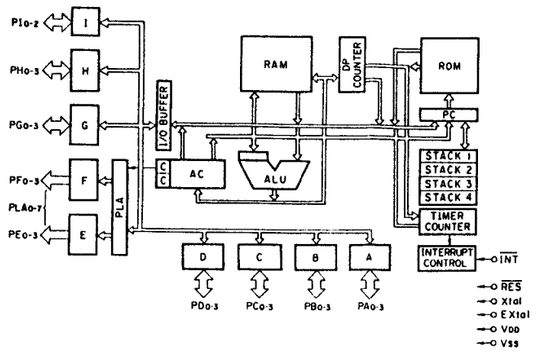
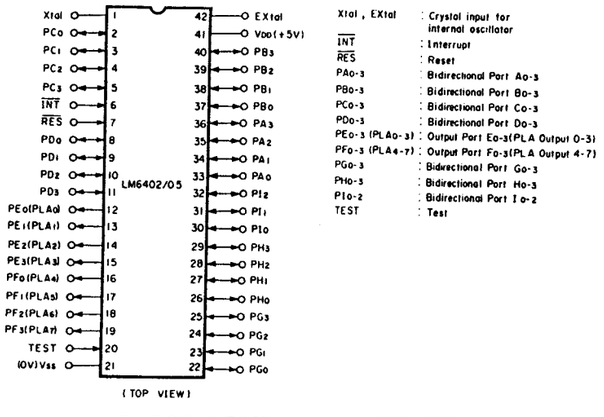


Fig. 7.2.6 Analog Switch Selector TC9145P

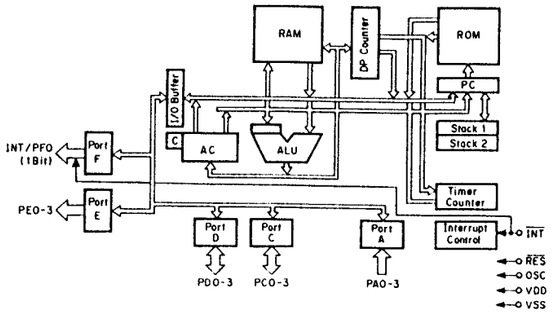


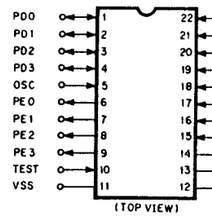


Xtal , EXtal	:	Crystal input for internal oscillator
INT	:	Interrupt
RES	:	Reset
PAo-3	:	Bidirectional Port Ao-3
PBo-3	:	Bidirectional Port Bo-3
PCo-3	:	Bidirectional Port Co-3
PDo-3	:	Bidirectional Port Do-3
PEo-3 (PLAo-3)	:	Output Port Eo-3(PLA Output 0-3)
PFo-3 (PLA4-7)	:	Output Port Fo-3(PLA Output 4-7)
PGo-3	:	Bidirectional Port Go-3
PHo-3	:	Bidirectional Port Ho-3
PIo-2	:	Bidirectional Port Io-2
TEST	:	Test

(TOP VIEW)

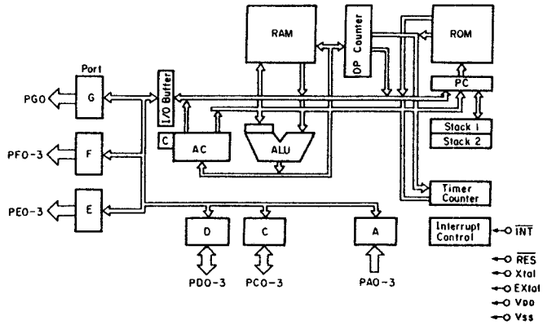
Fig. 7.2.8 4-Bit Micro-processor LM6402G

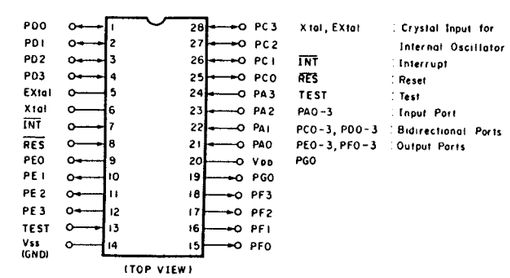




OSC	:	Oscillator
INT/PFO	:	Interrupt
RES	:	Reset
TEST	:	Test
PAO-3	:	Input Port
PCO-3, PDO-3	:	Bidirectional Ports
PEO-3	:	Output Port

Fig. 7.2.9 4-Bit Micro-processor LM6417E-338

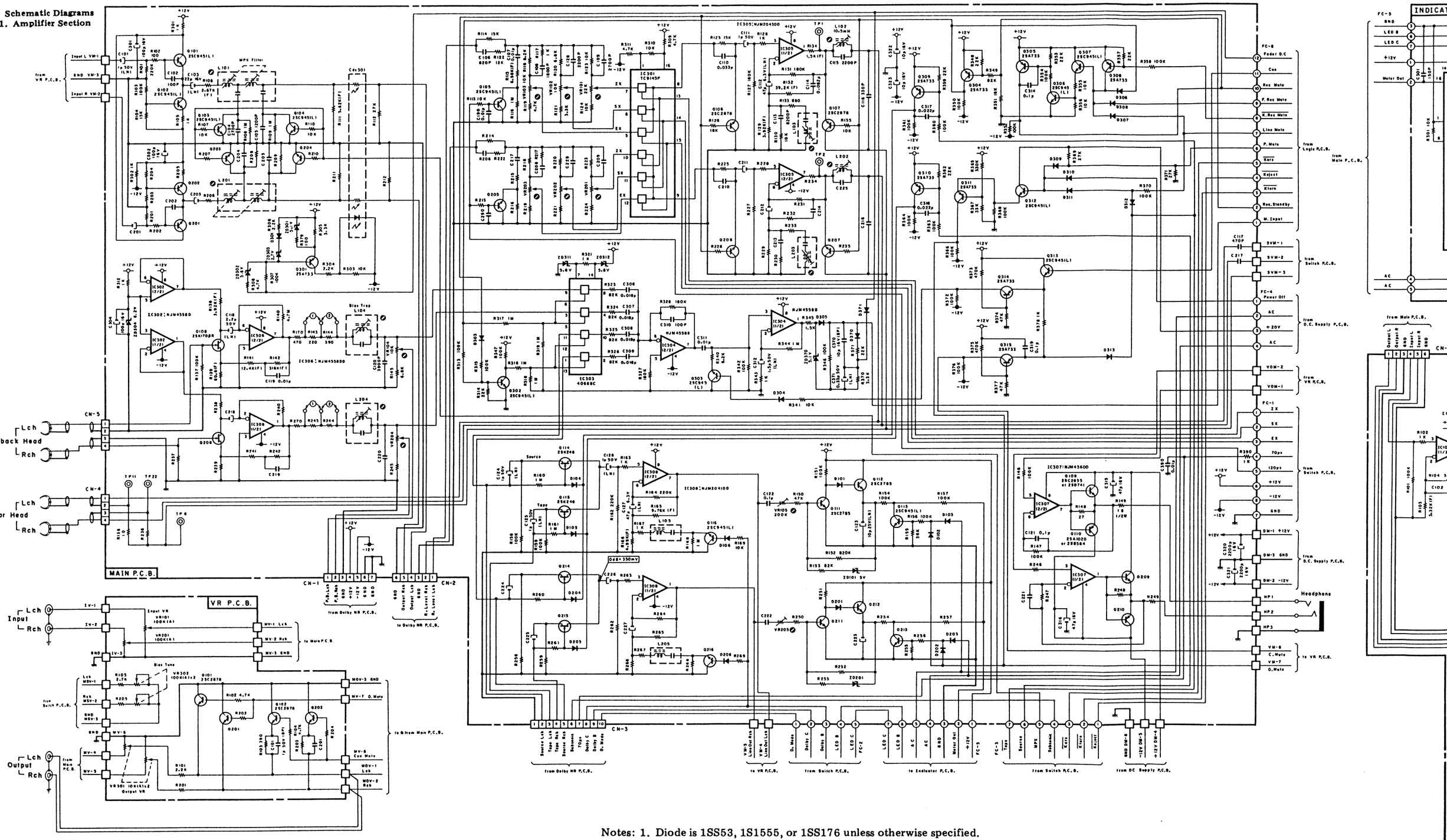




Xtal, EXtal	:	Crystal Input for Internal Oscillator
INT	:	Interrupt
RES	:	Reset
TEST	:	Test
PAO-3	:	Input Port
PCO-3, PDO-3	:	Bidirectional Ports
PEO-3, PFO-3	:	Output Ports
PGO		

Fig. 7.2.7 4-Bit Micro-processor LM6416E-106

7.3. Schematic Diagrams
7.3.1. Amplifier Section



Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.
3. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
4. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

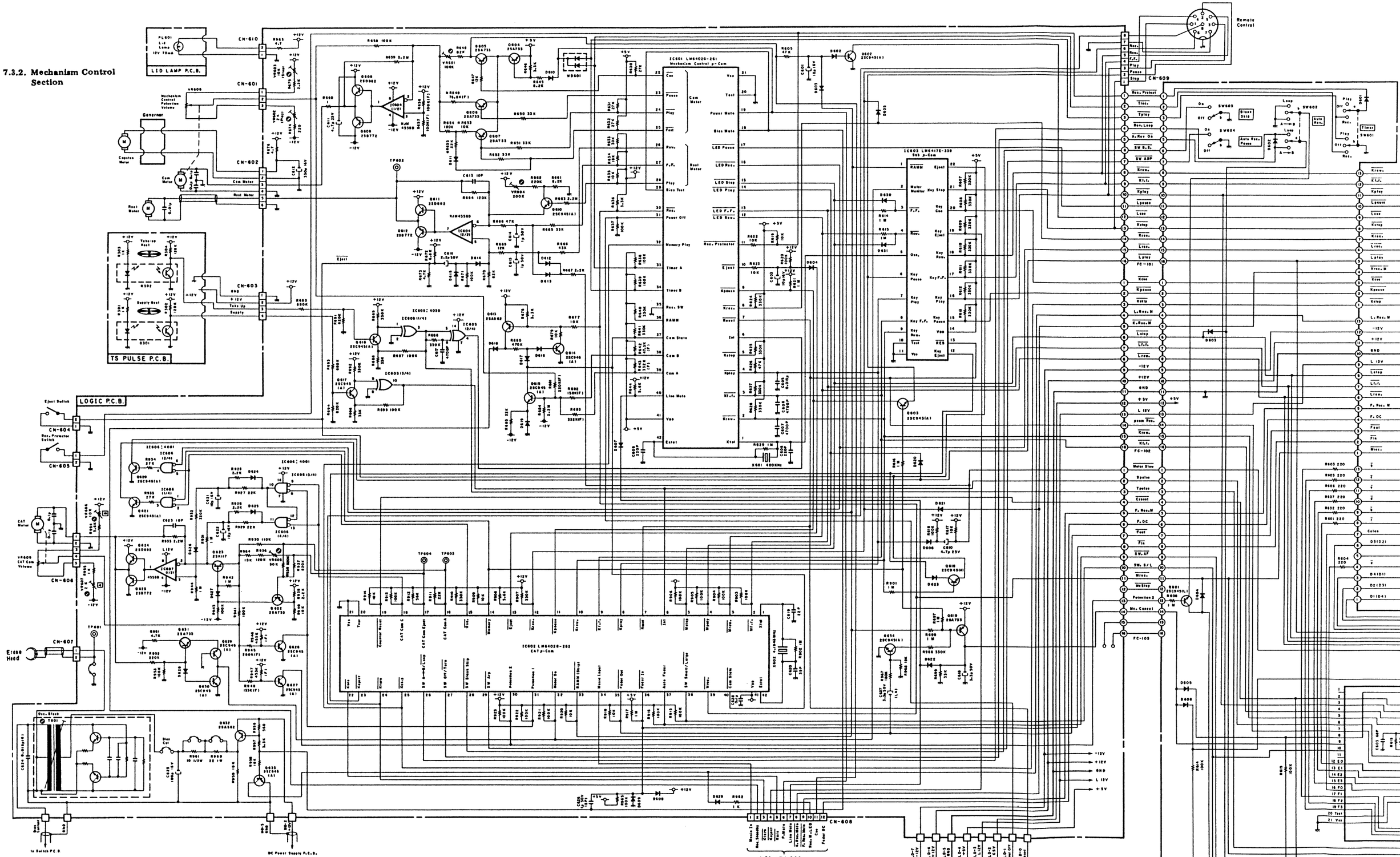
Fig. 7.3.1

cified.

angeable with each other.
ngeable with each other.

Fig. 7.3.1

7.3.2. Mechanism Control Section



Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.
3. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
4. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

Fig. 7.3.2

WARNING:

Parts marked with the symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.
It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.
WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

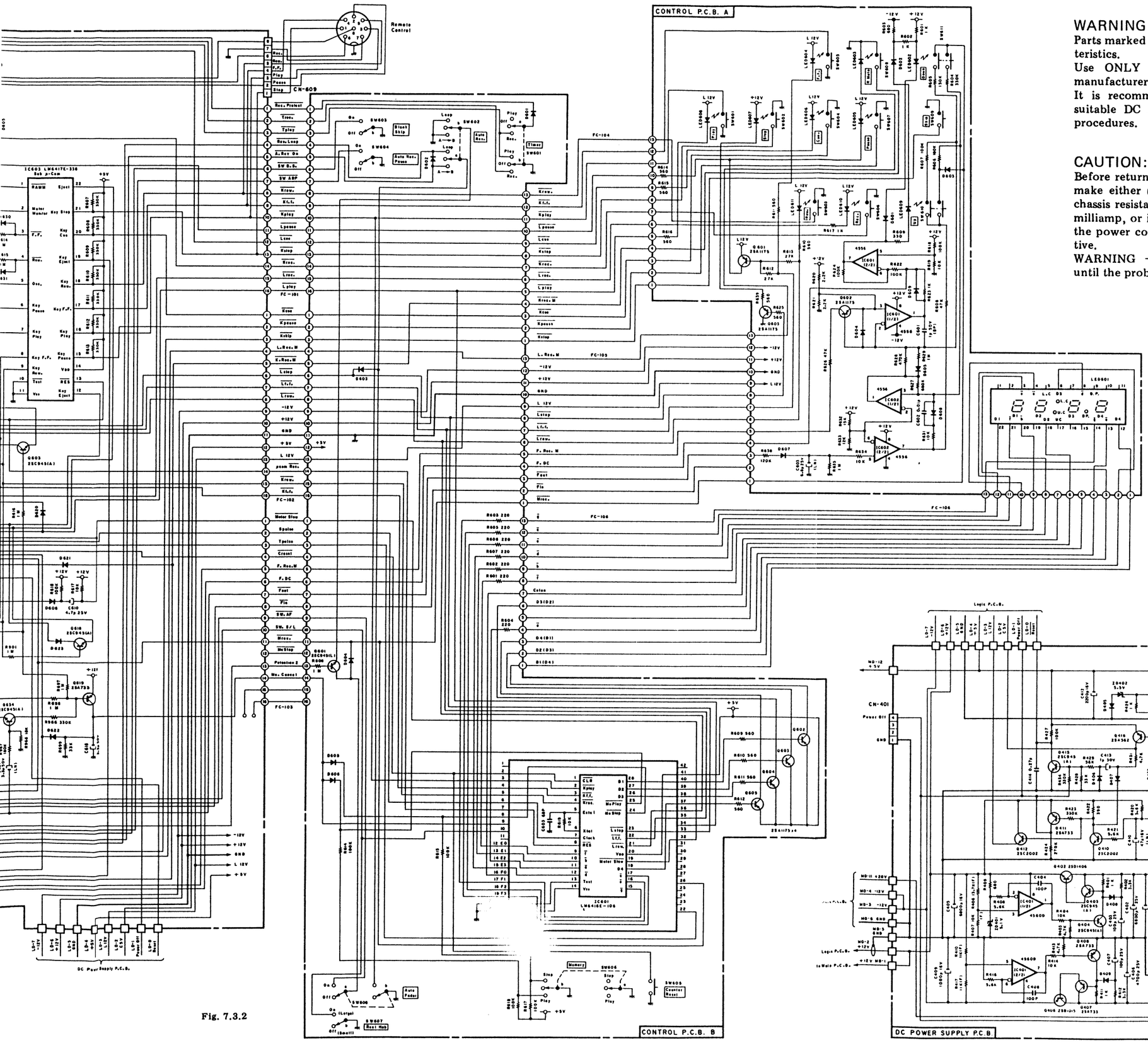


Fig. 7.3.2

8. TIMING CHART AND EQ. AMP. FREQUENCY RESPONSE

8.1. Overall Timing Chart

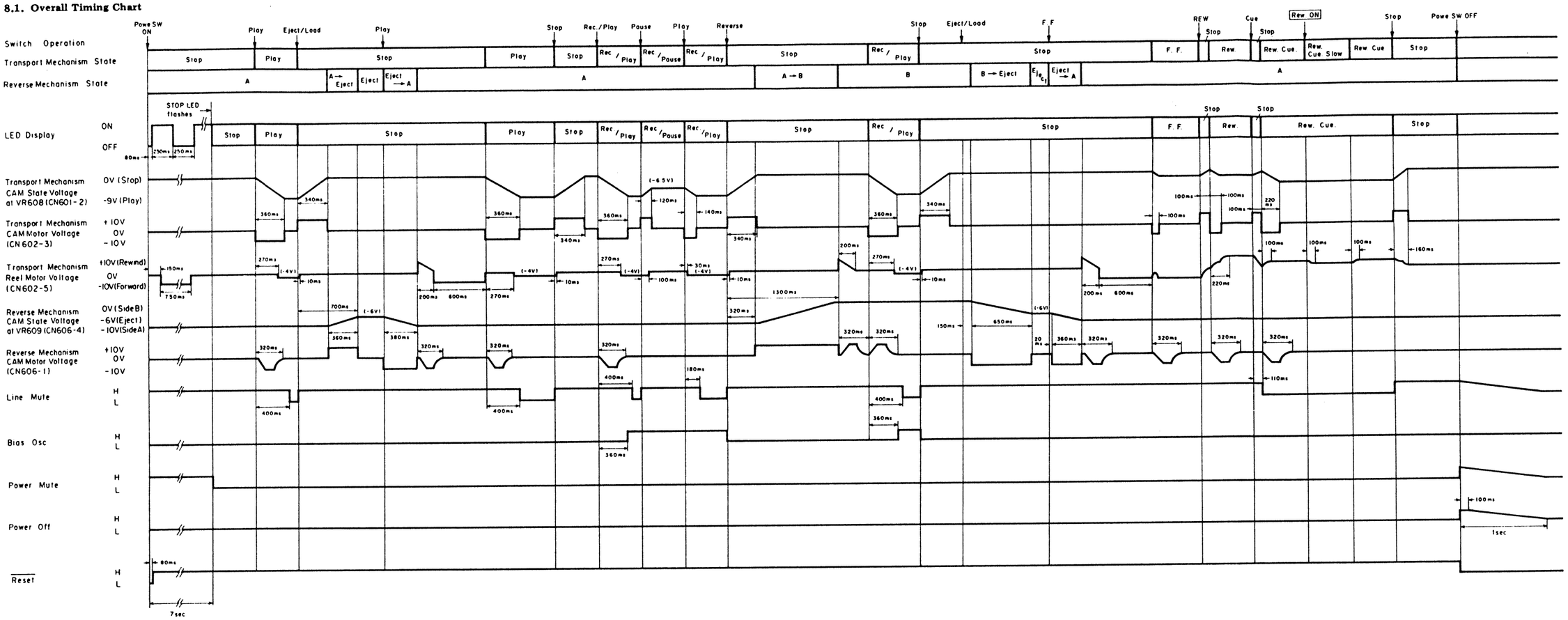


Fig. 8.1

8.2. Eq. Amp. Frequency Response

(1) Playback Frequency Response

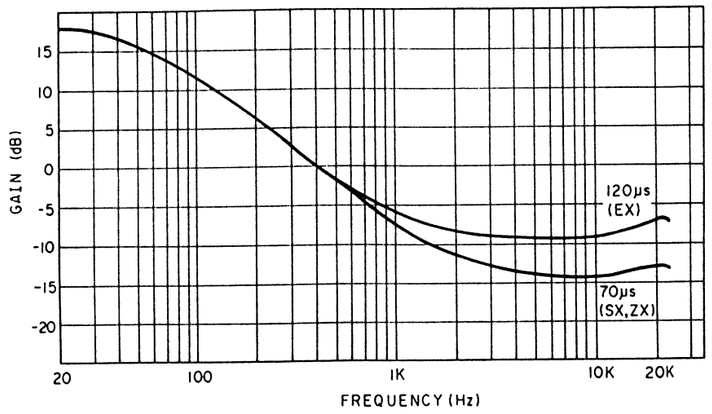


Fig. 8.2.1

(2) Record Current Frequency Response

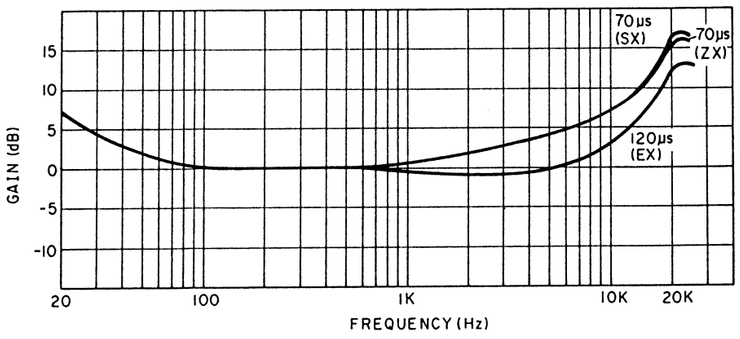
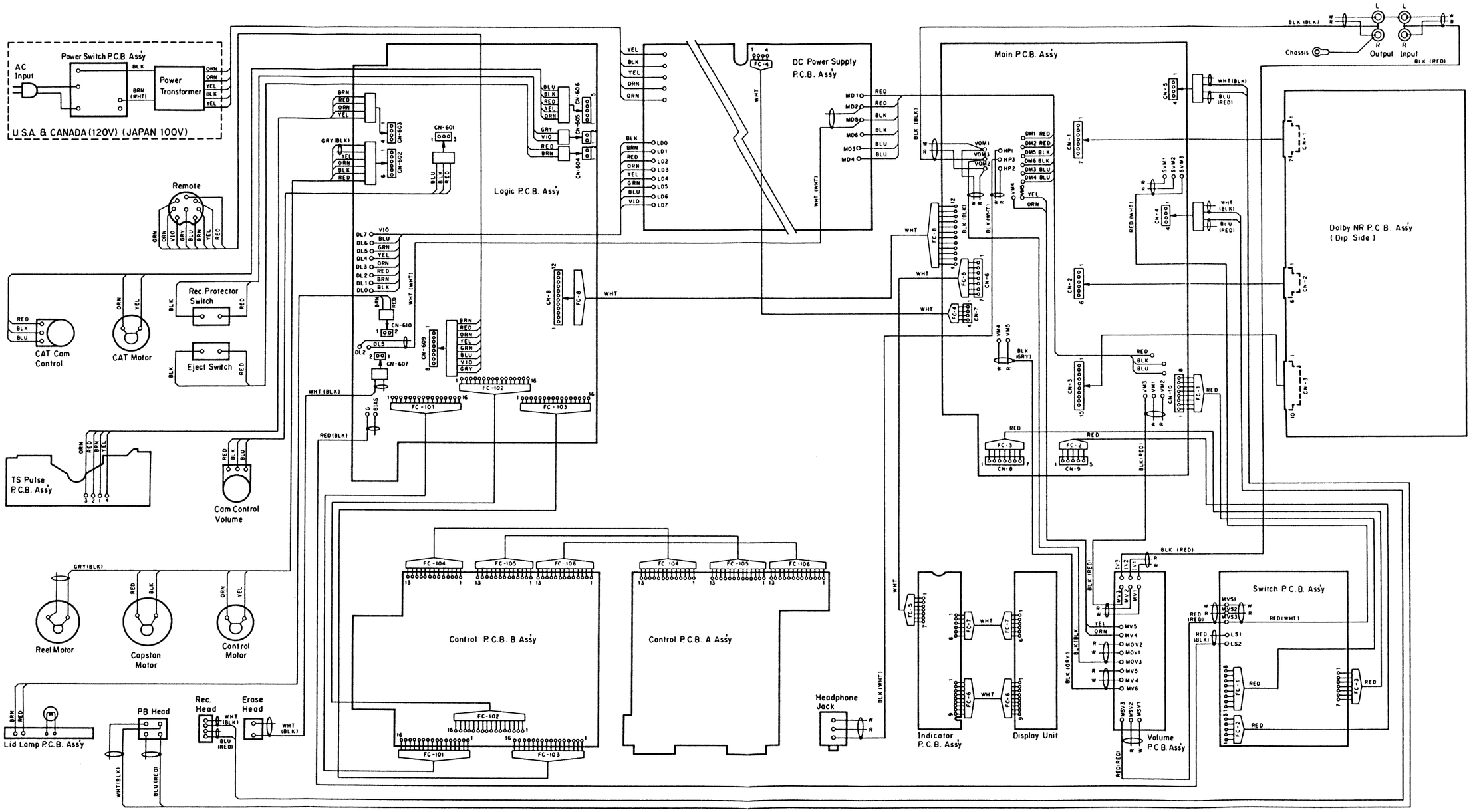


Fig. 8.2.2

9. WIRING DIAGRAM



Notes: 1. Table of wire colors

BRN	— Brown	BLU	— Blue
RED	— Red	VIO	— Violet
ORN	— Orange	GRY	— Gray
YEL	— Yellow	WHT	— White
GRN	— Green	BLK	— Black

2. Component side view of the P.C.B. is illustrated unless otherwise specified.
3. Wire tube color is shown in ( ).

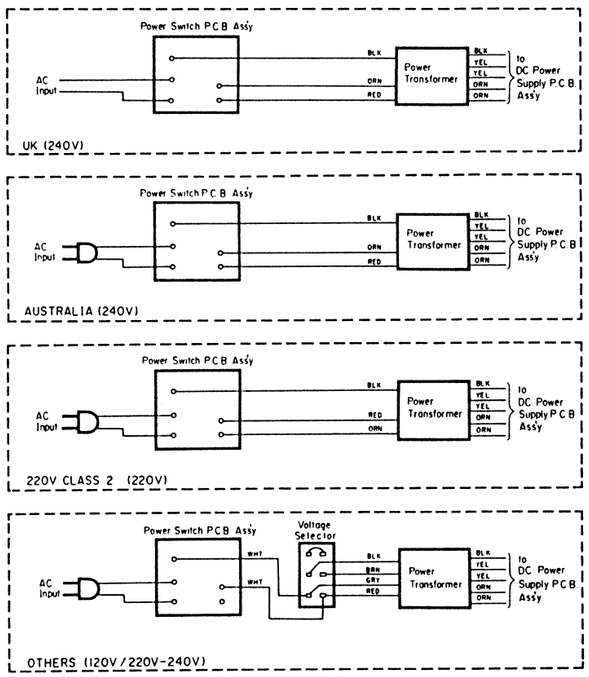


Fig. 9.2

10. BLOCK DIAGRAMS

10.1. Amplifier Section

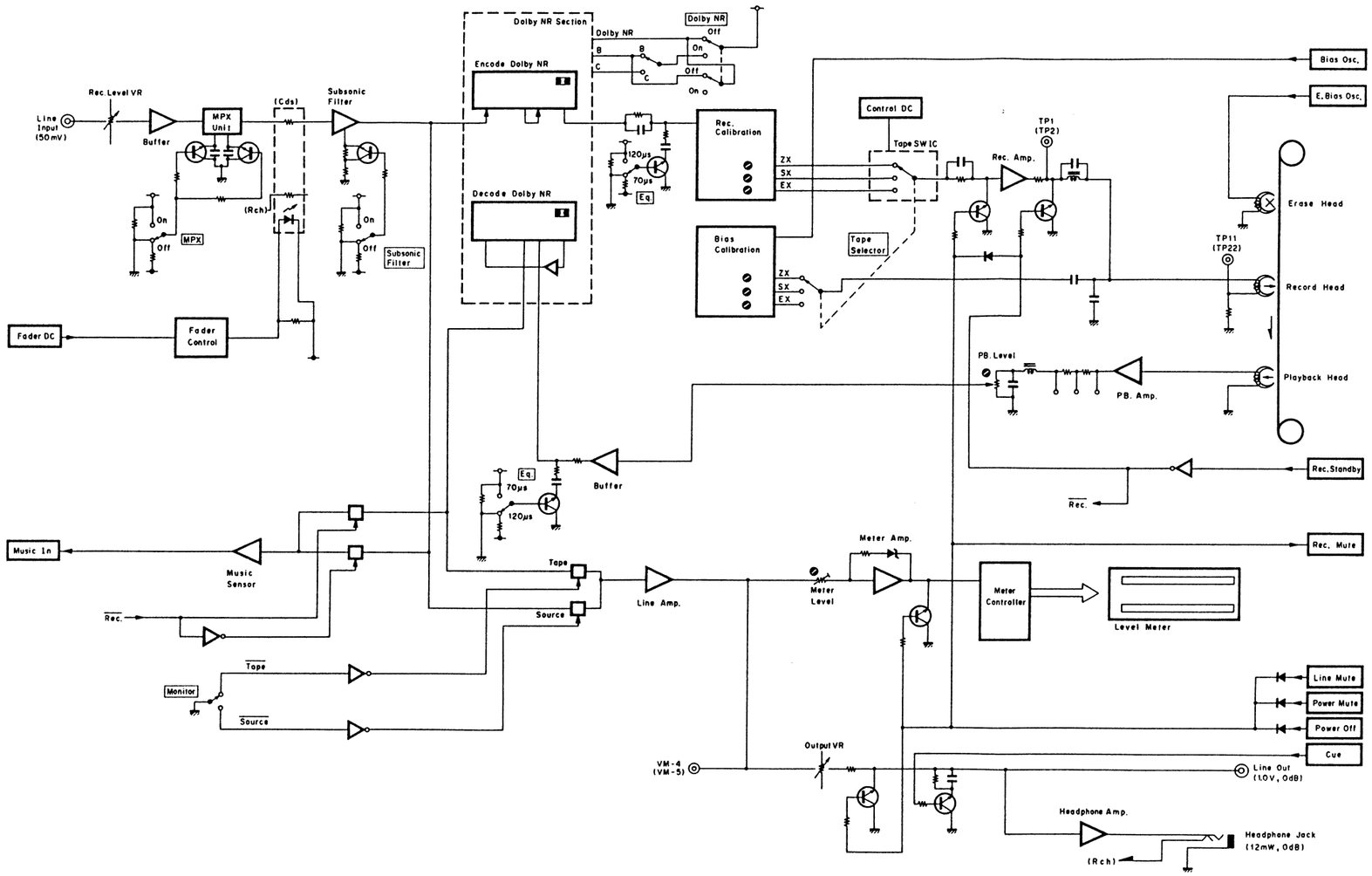


Fig. 10.1

10.2. Mechanism Control Section

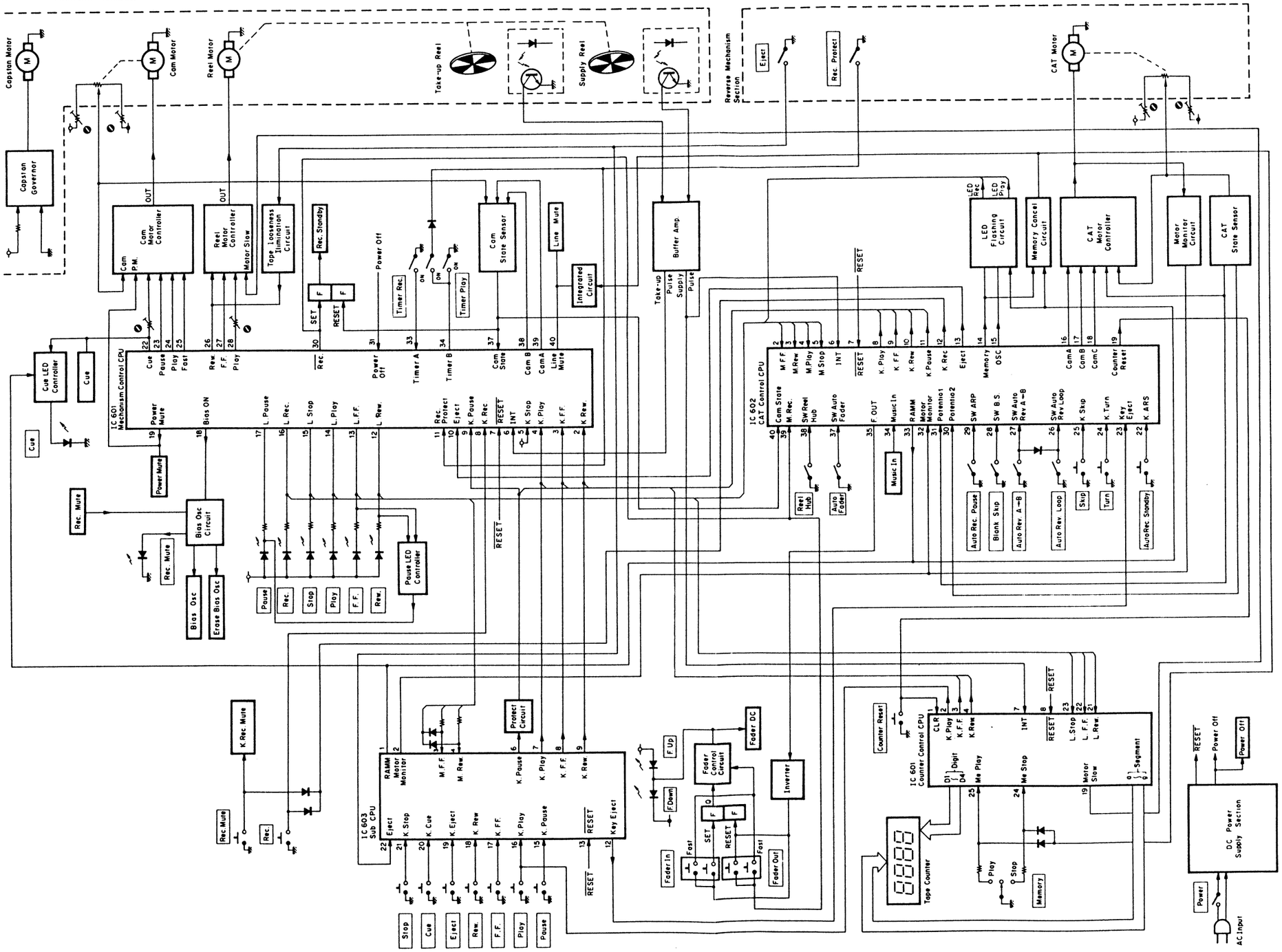


Fig. 10.2

11. SPECIFICATIONS

Track Configuration	4 Tracks/2-Channel Stereo (auto-reverse recording and playback)
Heads	3 (Erase Head x 1, Record Head x 1, Playback Head x 1)
Motors (Tape Transport)	PLL Servo Motor (Capstan Drive) x 1 DC Motor (Reel Drive) x 1
Power Source	100, 120, 120/220-240, 220 or 240 V AC; 50/60 Hz (According to country of sale)
Power Consumption	33 W max.
Tape Speed	1-7/8 ips. (4.8 cm/sec.)
Wow and Flutter	Less than 0.04% WTD RMS Less than 0.08% WTD Peak
Frequency Response	20 Hz — 20,000 Hz ±3 dB (recording level —20 dB)
Signal to Noise Ratio	Dolby C-Type NR on <70 μs, ZX tape> Better than 70 dB (400 Hz, 3% THD, IHF A-WTD RMS) Dolby B-Type NR on <70 μs, ZX tape> Better than 64 dB (400 Hz, 3% THD, IHF A-WTD RMS)
Total Harmonic Distortion	Less than 0.9% (400 Hz, 0 dB, ZX tape) Less than 1.0% (400 Hz, 0 dB, SX, EXII tape)
Erasure	Better than 60 dB (100 Hz, 0 dB)
Separation	Better than 36 dB (1 kHz, 0 dB)
Crosstalk	Better than 60 dB (1 kHz, 0 dB)
Bias Frequency	105 kHz
Input (Line)	50 mV/70 kΩ
Output (Line)	1.0 V (400 Hz, 0 dB, output level control at max.) 2.2 kΩ
(Headphones)	12 mW (400 Hz, 0 dB, output level control at max.) 8 Ω load
Fast-Winding Time	Approx. 60 seconds (with C-60 cassette)
Dimensions	450 (W) x 144 (H) x 300 (D) millimeters 17-3/4 (W) x 5-11/16 (H) x 11-13/16 (D) inches
Approximate Weight	10 kg 22 lb. 1 oz.

- Specification and appearance design are subject to change for further improvement without notice.
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Service Manual

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